



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
AIR QUALITY PROGRAM

PLAN APPROVAL

Issue Date: January 31, 2013

Effective Date: April 2, 2013

Revision Date: April 2, 2013

Expiration Date: July 31, 2014

Revision Type: Modification

In accordance with the provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and 25 Pa. Code Chapter 127, the Owner, [and Operator if noted] (hereinafter referred to as permittee) identified below is authorized by the Department of Environmental Protection (Department) to construct, install, modify or reactivate the air emission source(s) more fully described in the site inventory list. This Facility is subject to all terms and conditions specified in this plan approval. Nothing in this plan approval relieves the permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

The regulatory or statutory authority for each plan approval condition is set forth in brackets. All terms and conditions in this permit are federally enforceable unless otherwise designated as "State-Only" requirements.

Plan Approval No. 41-00084A

Federal Tax Id - Plant Code: 45-2228083-1

Owner Information

Name: MOXIE PATRIOT LLC

Mailing Address: 612 CENTER ST S STE 200  
VIENNA, VA 22180-5823

Plant Information

Plant: MOXIE PATRIOT LLC/MOXIE PATRIOT GENERATION PLANT

Location: 41 Lycoming County 41912 Clinton Township

SIC Code: 4911 Trans. & Utilities - Electric Services

Responsible Official

Name: KENT J MORTON

Title: VICE PRESIDENT

Phone: (571) 594 - 0150

Plan Approval Contact Person

Name: KENT J MORTON

Title: VICE PRESIDENT

Phone: (571) 594 - 0150

[Signature] \_\_\_\_\_

MUHAMMAD Q. ZAMAN, ENVIRONMENTAL PROGRAM MANAGER, NORTHCENTRAL REGION



#### Plan Approval Description

This plan approval is for the construction of two natural-gas-fired combined cycle powerblocks where each powerblock consists of a combustion turbine and heat recovery steam generator with duct burner. The two powerblocks constructed pursuant to this plan approval will be either the two powerblocks rated 472 megawatts (MW) (P101 and P102) or the powerblocks rated 458 MW (P103 and P104). Additionally, this plan approval is for the construction of a 1464 bhp diesel-fired emergency generator, 460 bhp diesel-fired fire pump, 1600 gallon diesel tank, 300 gallon diesel tank, two 15,000 gallon (each) lube oil tanks and ancillary electrical equipment.

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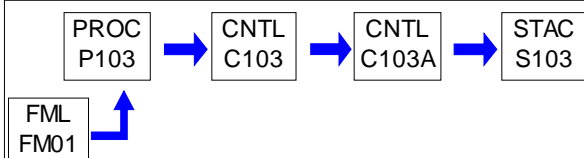
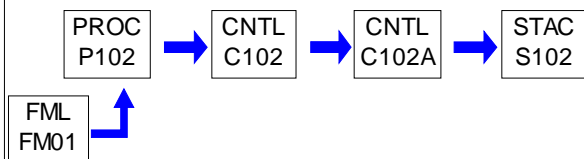
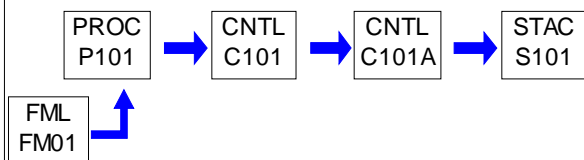
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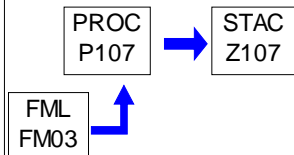
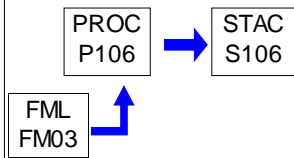
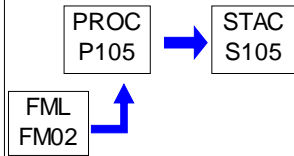
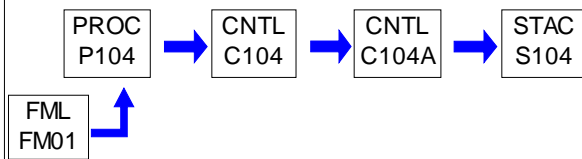
### Section G. Miscellaneous

## SECTION A. Plan Approval Inventory List

Source ID	Source Name	Capacity/Throughput	Fuel/Material
P101	472 MW COMBUSTION TURBINE & DUCT BURNER		
P102	472 MW COMBUSTION TURBINE & DUCT BURNER		
P103	458 MW COMBUSTION TURBINE & DUCT BURNER		
P104	458 MW COMBUSTION TURBINE & DUCT BURNER		
P105	EMERGENCY GENERATOR ENGINE		
P106	FIRE PUMP ENGINE		
P107	STORAGE TANKS		
C101	SCR		
C101A	OXIDATION CATALYST		
C102	SCR		
C102A	OXIDATION CATALYST		
C103	SCR		
C103A	OXIDATION CATALYST		
C104	SCR		
C104A	OXIDATION CATALYST		
FM01	NATURAL GAS		
FM02	1600 GALLON DIESEL TANK		
FM03	300 GALLON DIESEL TANK		
S101	STACK		
S102	STACK		
S103	STACK		
S104	STACK		
S105	STACK		
S106	STACK		
Z107	TANK EMISSIONS		

### PERMIT MAPS



**PERMIT MAPS**

## SECTION B. General Plan Approval Requirements

### #001 [25 Pa. Code § 121.1]

#### Definitions

Words and terms that are not otherwise defined in this plan approval shall have the meanings set forth in Section 3 of the Air Pollution Control Act (35 P.S. § 4003) and 25 Pa. Code § 121.1.

### #002 [25 Pa. Code § 127.12b (a) (b)]

#### Future Adoption of Requirements

The issuance of this plan approval does not prevent the future adoption by the Department of any rules, regulations or standards, or the issuance of orders necessary to comply with the requirements of the Federal Clean Air Act or the Pennsylvania Air Pollution Control Act, or to achieve or maintain ambient air quality standards. The issuance of this plan approval shall not be construed to limit the Department's enforcement authority.

### #003 [25 Pa. Code § 127.12b]

#### Plan Approval Temporary Operation

This plan approval authorizes temporary operation of the source(s) covered by this plan approval provided the following conditions are met.

(a) When construction, installation, modification, or reactivation is being conducted, the permittee shall provide written notice to the Department of the completion of the activity approved by this plan approval and the permittee's intent to commence operation at least five (5) working days prior to the completion of said activity. The notice shall state when the activity will be completed and when the permittee expects to commence operation. When the activity involves multiple sources on different time schedules, notice is required for the commencement of operation of each source.

(b) Pursuant to 25 Pa. Code § 127.12b (d), temporary operation of the source(s) is authorized to facilitate the shakedown of sources and air cleaning devices, to permit operations pending the issuance of a permit under 25 Pa. Code Chapter 127, Subchapter F (relating to operating permits) or Subchapter G (relating to Title V operating permits) or to permit the evaluation of the air contaminant aspects of the source.

(c) This plan approval authorizes a temporary operation period not to exceed 180 days from the date of commencement of operation, provided the Department receives notice from the permittee pursuant to paragraph (a), above.

(d) The permittee may request an extension of the 180-day shakedown period if further evaluation of the air contamination aspects of the source(s) is necessary. The request for an extension shall be submitted, in writing, to the Department at least 15 days prior to the end of the initial 180-day shakedown period and shall provide a description of the compliance status of the source, a detailed schedule for establishing compliance, and the reasons compliance has not been established. This temporary operation period will be valid for a limited time and may be extended for additional limited periods, each not to exceed 180 days.

(e) The notice submitted by the permittee pursuant to subpart (a) above, prior to the expiration of the plan approval, shall modify the plan approval expiration date on Page 1 of this plan approval. The new plan approval expiration date shall be 180 days from the date of commencement of operation.

### #004 [25 Pa. Code § 127.12(a) (10)]

#### Content of Applications

The permittee shall maintain and operate the sources and associated air cleaning devices in accordance with good engineering practice as described in the plan approval application submitted to the Department.

### #005 [25 Pa. Code §§ 127.12(c) and (d) & 35 P.S. § 4013.2]

#### Public Records and Confidential Information

(a) The records, reports or information obtained by the Department or referred to at public hearings shall be available to the public, except as provided in paragraph (b) of this condition.

(b) Upon cause shown by the permittee that the records, reports or information, or a particular portion thereof, but not emission data, to which the Department has access under the act, if made public, would divulge production or sales figures or methods, processes or production unique to that person or would otherwise tend to affect adversely the

## SECTION B. General Plan Approval Requirements

competitive position of that person by revealing trade secrets, including intellectual property rights, the Department will consider the record, report or information, or particular portion thereof confidential in the administration of the act. The Department will implement this section consistent with sections 112(d) and 114(c) of the Clean Air Act (42 U.S.C.A. § § 7412(d) and 7414(c)). Nothing in this section prevents disclosure of the report, record or information to Federal, State or local representatives as necessary for purposes of administration of Federal, State or local air pollution control laws, or when relevant in a proceeding under the act.

### #006 [25 Pa. Code § 127.12b]

#### Plan Approval terms and conditions.

[Additional authority for this condition is derived from 25 Pa. Code Section 127.13]

(a) This plan approval will be valid for a limited time, as specified by the expiration date contained on Page 1 of this plan approval. Except as provided in § § 127.11a and 127.215 (relating to reactivation of sources; and reactivation), at the end of the time, if the construction, modification, reactivation or installation has not been completed, a new plan approval application or an extension of the previous approval will be required.

(b) If construction has commenced, but cannot be completed before the expiration of this plan approval, an extension of the plan approval must be obtained to continue construction. To allow adequate time for departmental action, a request for the extension shall be postmarked at least thirty (30) days prior to the expiration date. The request for an extension shall include the following:

- (i) A justification for the extension,
- (ii) A schedule for the completion of the construction

If construction has not commenced before the expiration of this plan approval, then a new plan approval application must be submitted and approval obtained before construction can commence.

(c) If the construction, modification or installation is not commenced within 18 months of the issuance of this plan approval or if there is more than an 18-month lapse in construction, modification or installation, a new plan approval application that meets the requirements of 25 Pa. Code Chapter 127, Subchapter B (related to plan approval requirements), Subchapter D (related to prevention of significant deterioration of air quality), and Subchapter E (related to new source review) shall be submitted. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified.

### #007 [25 Pa. Code § 127.32]

#### Transfer of Plan Approvals

(a) This plan approval may not be transferred from one person to another except when a change of ownership is demonstrated to the satisfaction of the Department and the Department approves the transfer of the plan approval in writing.

(b) Section 127.12a (relating to compliance review) applies to a request for transfer of a plan approval. A compliance review form shall accompany the request.

(c) This plan approval is valid only for the specific source and the specific location of the source as described in the application.

### #008 [25 Pa. Code § 127.12(4) & 35 P.S. § 4008 & § 114 of the CAA]

#### Inspection and Entry

(a) Pursuant to 35 P.S. § 4008, no person shall hinder, obstruct, prevent or interfere with the Department or its personnel in the performance of any duty authorized under the Air Pollution Control Act.

(b) The permittee shall also allow the Department to have access at reasonable times to said sources and associated air cleaning devices with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act and regulations adopted under the act.



## SECTION B. General Plan Approval Requirements

(c) Nothing in this plan approval condition shall limit the ability of the Environmental Protection Agency to inspect or enter the premises of the permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

### #009 [25 Pa. Code 127.13a]

#### Plan Approval Changes for Cause

This plan approval may be terminated, modified, suspended or revoked and reissued if one or more of the following applies:

- (a) The permittee constructs or operates the source subject to the plan approval in violation of the act, the Clean Air Act, the regulations promulgated under the act or the Clean Air Act, a plan approval or permit or in a manner that causes air pollution.
- (b) The permittee fails to properly or adequately maintain or repair an air pollution control device or equipment attached to or otherwise made a part of the source.
- (c) The permittee fails to submit a report required by this plan approval.
- (d) The Environmental Protection Agency determines that this plan approval is not in compliance with the Clean Air Act or the regulations thereunder.

### #010 [25 Pa. Code §§ 121.9 & 127.216]

#### Circumvention

- (a) The permittee, or any other person, may not circumvent the new source review requirements of 25 Pa. Code Chapter 127, Subchapter E by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.
- (b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this plan approval, the Air Pollution Control Act or the regulations promulgated thereunder, except that with prior approval of the Department, the device or technique may be used for control of malodors.

### #011 [25 Pa. Code § 127.12c]

#### Submissions

Reports, test data, monitoring data, notifications shall be submitted to the:

Regional Air Program Manager  
PA Department of Environmental Protection  
(At the address given on the plan approval transmittal letter or otherwise notified)

### #012 [25 Pa. Code § 127.12(9) & 40 CFR Part 68]

#### Risk Management

- (a) If required by Section 112(r) of the Clean Air Act, the permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act, 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).
- (b) The permittee shall prepare and implement a Risk Management Plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act when a regulated substance listed in 40 CFR § 68.130 is present in a process in more than the listed threshold quantity at the facility. The permittee shall submit the RMP to the Environmental Protection Agency according to the following schedule and requirements:
  - (1) The permittee shall submit the first RMP to a central point specified by the Environmental Protection Agency no later than the latest of the following:

**SECTION B. General Plan Approval Requirements**

- (i) Three years after the date on which a regulated substance is first listed under § 68.130; or,
- (ii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The permittee shall submit any additional relevant information requested by the Department or the Environmental Protection Agency concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR § 68.190.

(3) The permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68, including a checklist addressing the required elements of a complete RMP.

(c) As used in this plan approval condition, the term "process" shall be as defined in 40 CFR § 68.3. The term "process" means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

**#013 [25 Pa. Code § 127.25]****Compliance Requirement**

A person may not cause or permit the operation of a source subject to § 127.11 (relating to plan approval requirements), unless the source and air cleaning devices identified in the application for the plan approval and the plan approval issued to the source, are operated and maintained in accordance with specifications in the application and conditions in the plan approval issued by the Department. A person may not cause or permit the operation of an air contamination source subject to this chapter in a manner inconsistent with good operating practices.

## SECTION C. Site Level Plan Approval Requirements

### I. RESTRICTIONS.

#### Emission Restriction(s).

##### # 001 [25 Pa. Code §123.1]

##### Prohibition of certain fugitive emissions

The permittee shall not permit the emission of fugitive air contaminants into the outdoor atmosphere from a source other than the following:

- (1) Construction or demolition of buildings or structures.
- (2) Grading, paving and maintenance of roads and streets.
- (3) Use of roads and streets. Emissions from material in or on trucks, railroad cars and other vehicular equipment are not considered as emissions from use of roads and streets.
- (4) Clearing of land.
- (5) Stockpiling of materials.
- (6) Open burning operations.
- (7) Blasting in open pit mines. Emissions from drilling are not considered as emissions from blasting.
- (8) Sources and classes of sources other than those identified above, for which the permittee has obtained a determination from the Department that fugitive emissions from the source, after appropriate control, meet the following requirements:

- (a) the emissions are of minor significance with respect to causing air pollution; and
- (b) the emissions are not preventing or interfering with the attainment or maintenance of any ambient air quality standard.

##### # 002 [25 Pa. Code §123.2]

##### Fugitive particulate matter

The permittee shall not permit fugitive particulate matter to be emitted into the outdoor atmosphere from a source specified in (1) through (8) in condition #001 if the emissions are visible at the point the emissions pass outside the permittee's property.

##### # 003 [25 Pa. Code §123.41]

##### Limitations

The permittee shall not permit the emission of visible air contaminants into the outdoor atmosphere in such a manner that the opacity of the emission is either of the following:

- (1) Equal to or greater than 20% for a period or periods aggregating more than three minutes in any 1 hour.
- (2) Equal to or greater than 60% at any time.

##### # 004 [25 Pa. Code §123.42]

##### Exceptions

The emission limitations in condition #003 shall not apply when:

- (1) The presence of uncombined water is the only reason for failure of the emission to meet the limitations;
- (2) The emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions;
- (3) The emission results from sources specified in condition #001 (1) through (8).

##### # 005 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

(a) If the permittee elects to construct the first option as identified in this plan approval, the permittee shall comply with the emissions limitations specified below at all times including during periods of startup and shutdown:

the combined air contaminant emissions from all sources at the Moxie Patriot Generation Plant shall not emit more than 233.5 tons of carbon monoxide in any 12 consecutive month period, 214.8 tons of nitrogen oxides (as nitrogen dioxide) in any 12 consecutive month period, 67.6 tons of volatile organic compounds in any 12 consecutive month period, and 13.00 tons of hazardous air pollutants in any 12 consecutive month period, 105.0 tons of total PM (PM<sub>10</sub>/PM<sub>2.5</sub> including condensable PM) in any 12 consecutive month period, 28.4 tons of sulfur oxides (as sulfur dioxide) in any 12 consecutive month period, 4.4 tons of sulfuric acid mist in any 12 consecutive month period and 3,145,276 tons of greenhouse gases (CO<sub>2</sub>e) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the permittee shall comply with the emissions limitations specified below at all times including during periods of startup and shutdown:

## SECTION C. Site Level Plan Approval Requirements

the combined air contaminant emissions from all sources at the Moxie Patriot Generation Plant shall not emit more than 173.7 ton of carbon monoxide in any 12 consecutive month period, 210.4 tons of nitrogen oxides (as nitrogen dioxide) in any 12 consecutive month period, 60.2 tons of volatile organic compounds in any 12 consecutive month period, 13.0 tons of hazardous air pollutants in any 12 consecutive month period, 107.4 tons of total PM (PM/PM10/PM2.5 including condensable PM) in any 12 consecutive month period, 26.8 tons of sulfur oxides (as sulfur dioxide) in any 12 consecutive month period, 4.2 tons of sulfuric acid mist in any 12 consecutive month period and 2,803,217 tons of greenhouse gases (CO<sub>2</sub>e) in any 12 consecutive month period.

### # 006 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology requirements of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the best available technology provisions of 25 Pa. Code Section 127.1 and 127.12, the combined total sulfur hexafluoride (SF<sub>6</sub>) emissions from all of the circuit breakers used at the facility shall not exceed 6.3 pounds in any 12 consecutive month period. Additionally, the greenhouse gas emissions, expressed as CO<sub>2</sub>e, from all of the circuit breakers used at the facility shall not exceed 75.3 tons in any 12 consecutive month period.

## II. TESTING REQUIREMENTS.

### # 007 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

- (a) Pursuant to 25 Pa. Code § 139.3, at least 45 calendar days prior to commencing a EPA reference method testing program, a test protocol shall be submitted to the Department for review and approval. The test protocol shall meet all applicable requirements specified in the most current version of the Department's Source Testing Manual.
- (b) Pursuant to 25 Pa. Code § 139.3, at least 15 calendar days prior to commencing an emission testing program, notification as to the date and time of testing shall be given to the Department's North Central Regional Office. Notification shall also be sent to the Division of Source Testing and Monitoring. Notification shall not be made without prior receipt of a protocol acceptance letter from the Department.
- (c) Pursuant to 25 Pa. Code Section 139.53(a)(3) within 15 calendar days after completion of the on-site testing portion of a EPA reference method test program, if a complete test report has not yet been submitted, an electronic mail notification shall be sent to the Department's North Central Regional Office and Division of Source Testing and Monitoring indicating the completion date of the on-site testing.
- (d) Pursuant to 40 CFR Part 60.8(a), complete test reports shall be submitted to the Department no later than 60 calendar days after completion of the on-site testing portion of a EPA reference method test program.
- (e) Pursuant to 25 Pa. Code Section 139.53(b) a complete test report shall include a summary of the emission results on the first page of the report indicating if each pollutant measured is within permitted limits and a statement of compliance or non-compliance with all applicable permit conditions. The summary results will include, at a minimum, the following information:
  1. A statement that the owner or operator has reviewed the report from the emissions testing body and agrees with the findings.
  2. Permit number(s) and condition(s) which are the basis for the evaluation.
  3. Summary of results with respect to each applicable permit condition.
  4. Statement of compliance or non-compliance with each applicable permit condition.
- (f) Pursuant to 25 Pa. Code § 139.3, all submittals shall meet all applicable requirements specified in the most current version of the Department's Source Testing Manual.
- (g) All testing shall be performed in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection.
- (h) Pursuant to 25 Pa. Code Section 139.53(a)(1) and 139.53(a)(3) all submittals, besides notifications, shall be

## SECTION C. Site Level Plan Approval Requirements

accomplished through PSIMS\*Online available through <https://www.depgreenport.state.pa.us/ecommm/Login.jsp> when it becomes available. If internet submittal can not be accomplished, two (2) copies of the submittal shall be sent to the Pennsylvania Department of Environmental Protection, North Central Regional Office, Air Quality Program Manager, 208 West Third Street, Suite 101, Williamsport PA, 17701 with deadlines verified through document postmarks.

(i) The permittee shall insure all federal reporting requirements contained in the applicable subpart of 40 CFR are followed, including timelines more stringent than those contained herein. In the event of an inconsistency or any conflicting requirements between state and the federal, the most stringent provision, term, condition, method or rule shall be used by default.

### # 008 [25 Pa. Code §139.1]

#### Sampling facilities.

Upon the request of the Department, the permittee shall provide adequate sampling ports, safe sampling platforms and adequate utilities for the performance by the Department of tests on a source. The Department will set forth, in the request, the time period in which the facilities shall be provided, as well as the specifications for such facilities.

### # 009 [25 Pa. Code §139.11]

#### General requirements.

(1) As specified in 25 Pa. Code Section 139.11(1), performance tests shall be conducted while the respective source is operating at maximum routine operating conditions or under such other conditions, within the capacity of the equipment, as may be requested by the Department.

(2) As specified in 25 Pa. Code Section 139.11(2), the Department will consider test results for approval where sufficient information is provided to verify the source conditions existing at the time of the test and where adequate data is available to show the manner in which the test was conducted. Information submitted to the Department shall include, at a minimum all of the following:

- (a) A thorough source description, including a description of any air cleaning devices and the flue.
- (b) Process conditions, for example, the charging rate of raw material or rate of production of final product, boiler pressure, oven temperature, and other conditions which may affect emissions from the process.
- (c) The location of the sampling ports.
- (d) Effluent characteristics, including velocity, temperature, moisture content, gas density (percentage CO, CO<sub>2</sub>, O<sub>2</sub> and N<sub>2</sub>), static and barometric pressures.
- (e) Sample collection techniques employed, including procedures used, equipment descriptions and data to verify that isokinetic sampling for particulate matter collection occurred and that acceptable test conditions were met.
- (f) Laboratory procedures and results.
- (g) Calculated results.

## III. MONITORING REQUIREMENTS.

### # 010 [25 Pa. Code §123.43]

#### Measuring techniques

Visible emissions may be measured using either of the following:

- (1) A device approved by the Department and maintained to provide accurate opacity measurements.
- (2) Observers, trained and qualified to measure plume opacity with the naked eye or with the aid of any devices approved by the Department.

### # 011 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall conduct a daily inspection of the facility during daylight hours while the facility is operating to detect visible emissions, visible fugitive emissions, and malodors. Daily inspections are necessary to determine:

- (1) The presence of visible emissions.
- (2) The presence of visible fugitive emissions.
- (3) The presence of malodors beyond the boundaries of the facility.

(b) All detected visible emissions, visible fugitive emissions, or malodors that have the potential to exceed applicable limits

## SECTION C. Site Level Plan Approval Requirements

shall be reported to the manager of the facility.

### # 012 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology requirements of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the best available technology provisions of 25 Pa. Code Section 127.1 and 127.12, the circuit breakers at the facility shall be state-of-the-art sealed enclosed-pressure circuit breakers equipped with low-pressure alarms and a low-pressure lockout where the alarms are triggered when 10% of the sulfur hexafluoride (SF<sub>6</sub>) (by weight) has escaped. When the alarms are triggered, the permittee shall take immediate corrective action and fix the circuit breaker units to a likenew state in order to prevent the emission of sulfur hexafluoride (SF<sub>6</sub>) to the maximum extent practicable.

## IV. RECORDKEEPING REQUIREMENTS.

### # 013 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall keep accurate and comprehensive records of the monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, greenhouse gasses, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from all air-contaminant sources at the facility in order to demonstrate compliance with the emission limitations.

All records generated pursuant to this condition shall be retained for a minimum of five (5) years and be made available to the Department upon request.

### # 014 [25 Pa. Code §135.5]

#### Recordkeeping

The permittee shall maintain and make available upon request of the Department such records, including computerized records that may be necessary to comply with 25 Pa. Code Section 135.3. These may include records of production, fuel usage, maintenance of production or pollution control equipment or other information determined by the Department to be necessary for identification and quantification of potential and actual air contaminant emissions.

All records generated pursuant to this condition shall be retained for a minimum of five years and be made available to the Department upon request.

## V. REPORTING REQUIREMENTS.

### # 015 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall submit the monthly emissions (including supporting documentation) of nitrogen oxides, carbon monoxide, volatile organic compound, greenhouse gas, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from all air-contaminant sources at the facility in order to demonstrate compliance with the emission limitations on a semi-annual basis.

(a) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 016 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall submit all requested reports in accordance with the Department's suggested format.

### # 017 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall report malfunctions which occur at this facility to the Department. A malfunction is any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Malfunctions that are not resulting in, or potentially resulting in, air contaminant

## SECTION C. Site Level Plan Approval Requirements

emissions in excess of an applicable air contaminant emission limitation and/or are not resulting in, or potentially resulting in, noncompliance with any condition contained in this plan approval do not have to be reported. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(b) Failures that are caused in part by poor maintenance or careless operation shall be reported as excess emissions or deviations from the plan approval requirements.

(c) When the malfunction, excess emission or deviation from the plan approval requirements poses an imminent and substantial danger to the public health, safety, welfare, or environment, the permittee shall notify the Department and the County Emergency Management Agency within 1 hour after the discovery of an incident. The permittee shall submit a written report of instances of such malfunctions to the Department within three (3) business days of the telephone report.

(d) Any malfunction, excess emission or deviation from the plan approval requirements, or any malfunction resulting in, or which may possibly be resulting in, a violation of any applicable plan approval requirement or any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection, that is not subject to the notice requirements of subsection (c) of this permit condition shall be reported to the Department within twenty-four (24) hours of discovery. If the permittee is unable to provide notification by telephone to the Department's North Central Regional Office within twenty-four hours of discovery of a malfunction due to a weekend or holiday, the notification shall be made to the Department by no later than 4 p.m. on the first business day for the Department following the weekend or holiday.

(e) In notifying the Department, the permittee shall describe the following:

- (i) name and location of the facility,
- (ii) nature and cause of the malfunction or breakdown,
- (iii) time when the malfunction or breakdown was first observed,
- (iv) expected duration of excess emissions,
- (v) estimated rate of emissions and
- (vi) corrective actions or preventative measures taken.

(f) The permittee shall notify the Department immediately when corrective measures have been accomplished.

(g) Upon the request of the Department, the permittee shall submit a full written report to the Regional Air Program Manager within fifteen (15) days of the malfunction, excess emission or deviation from the plan approval requirements unless otherwise required above.

### # 018 [25 Pa. Code §135.3]

#### Reporting

(a) A person who owns or operates a source to which 25 Pa. Code Chapter 135 applies, and who has previously been advised by the Department to submit an annual Air Information Management Systems (AIMS) report, shall submit by March 1 of each year an AIMS report for the preceding calendar year. The report shall include information for all previously reported sources, new sources which were first operated during the preceding calendar year and sources modified during the same period which were not previously reported.

(b) A person who receives initial notification by the Department that an annual AIMS report is necessary, shall submit an initial annual AIMS report within 60 days after receiving the notification or by March 1 of the year following the year for which the report is required, whichever is later.

(c) A source owner or operator may request an extension of time from the Department for the filing of an annual AIMS report, and the Department may grant the extension for reasonable cause.

## VI. WORK PRACTICE REQUIREMENTS.

### # 019 [25 Pa. Code §123.1]

#### Prohibition of certain fugitive emissions

The permittee shall take all reasonable actions to prevent particulate matter from becoming airborne from any source specified in (1) through (8) in condition #001 herein. These actions shall include, but not be limited to, the following:

**SECTION C. Site Level Plan Approval Requirements**

- (1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.
- (2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.
- (3) Paving and maintenance of roadways.
- (4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

**# 020 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, all air-contaminant sources and control devices at the Moxie Patriot Generation Plant shall be maintained and operated in a manner consistent with good air pollution control practices and in accordance with the manufacturer's recommendations.

**VII. ADDITIONAL REQUIREMENTS.****# 021 [25 Pa. Code §121.7]****Prohibition of air pollution.**

The permittee shall not permit air pollution as that term is defined in the Pennsylvania Air Pollution Control Act (35 P.S. §§ 4001-4015).

**# 022 [25 Pa. Code §123.31]****Limitations**

The permittee shall not permit the emission of any malodorous air contaminants into the outdoor atmosphere from any source in such a manner that the malodors are detectable outside the property of the person on whose land the source is being operated.

**# 023 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The Department will evaluate the actual emission rates and may revise the allowable emission limitations based upon demonstrated performance (CEMS data, stack tests results), and/or subsequently promulgated applicable requirements during the first five years of operation. Any revision of the allowable emission limitations shall be accomplished by minor modification provided that the revised allowable emission limitations do not exceed levels at which the lowest achievable emission rate (LAER), best available control technology (BACT) and best available technology (BAT) were evaluated, do not exceed the level at which the facility impacts were modeled, and that are not a result of a physical change or change in method of operation at the facility.

**# 024 [25 Pa. Code §129.14]****Open burning operations**

The permittee shall not permit the open burning of material at this facility unless in accordance with 25 Pa. Code Section 129.14.

**VIII. COMPLIANCE CERTIFICATION.**

No additional compliance certifications exist except as provided in other sections of this plan approval including Section B (relating to Plan Approval General Requirements).

**IX. COMPLIANCE SCHEDULE.**

No compliance milestones exist.



## SECTION D. Source Level Plan Approval Requirements

Source ID: P101

Source Name: 472 MW COMBUSTION TURBINE &amp; DUCT BURNER

Source Capacity/Throughput:



### I. RESTRICTIONS.

#### Emission Restriction(s).

##### # 001 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit more than 117.2 tons of carbon monoxide in any 12 consecutive month period, 111.2 tons of nitrogen oxides in any 12 consecutive month period, 15.5 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.4 tons of sulfuric acid mist in any 12 consecutive month period, 54.0 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 102.9 tons of ammonia in any 12 consecutive month period, 33.9 tons of volatile organic compounds in any 12 consecutive month period, 1,572,362 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit more than 87.4 tons of carbon monoxide in any 12 consecutive month period, 109.0 tons of nitrogen oxides in any 12 consecutive month period, 14.6 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.2 tons of sulfuric acid mist in any 12 consecutive month period, 56.7 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 100.7 tons of ammonia in any 12 consecutive month period, 30.2 tons of volatile organic compounds in any 12 consecutive month period, 1,401,333 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

##### # 002 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

[Compliance with the nitrogen oxides and sulfur dioxide emissions limits in this condition will assure compliance with the nitrogen oxide and sulfur dioxide standards specified in 40 CFR Sections 60.4320 and 60.4330, respectively, as well as the limitations of 25 Pa. Code Chapter 123, relating to particulate matter emissions and sulfur compound emissions]

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) Emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed the limits specified below:

- i. Carbon monoxide: 2.0 ppm<sub>dv</sub>
- ii. Nitrogen oxides (expressed as NO<sub>2</sub>): 2.0 ppm<sub>dv</sub>
- iii. Volatile organic compounds: 1.0 ppm<sub>dv</sub> (without duct burner) and 1.5 ppm<sub>dv</sub> (with duct burner)
- iv. Sulfur oxides (expressed as SO<sub>2</sub>): 0.0011 lb/MMBtu
- v. Total (filterable and condensable) Particulate Matter: 0.0057 lb/MMBtu
- vi. Total PM<sub>10</sub>: 0.0057 lb/MMBtu
- vii. Total PM<sub>2.5</sub>: 0.0057 lb/MMBtu
- viii. H<sub>2</sub>SO<sub>4</sub>: 0.0005 lb/MMBtu

(b) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>

(c) The above emissions limits shall apply at all times except for periods of startup and shutdown.

## SECTION D. Source Level Plan Approval Requirements

### # 003 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, the emission of visible air contaminants from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not be in excess of 10% opacity for any 3-minute block and 10% opacity for any 6-minute block period during startup and shutdown.

### # 004 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 shall not emit more than 15.5 pounds of carbon monoxide per hour, 25.4 pounds of nitrogen oxides per hour and 23.5 pounds of ammonia per hour in any 1-hour period, as well as 3.5 pounds of sulfur dioxide per hour, 1.5 pounds of sulfuric acid mist per hour, 12.1 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 6.3 pounds of volatile organic compounds per hour.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblocks incorporated into Source IDs P103 and P104 shall not emit more than 15.2 pounds of carbon monoxide per hour, 24.9 pounds of nitrogen oxides per hour and 23.0 pounds of ammonia per hour in any 1-hour period, as well as 3.3 pounds of sulfur dioxide per hour, 1.4 pounds of sulfuric acid mist per hour, 12.9 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 5.4 pounds of volatile organic compounds per hour.

(c) The emissions limitations specified above in this condition do not include the air contaminant pollutants emitted during startup and shutdown.

### # 005 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total hazardous air pollutants (HAP) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total HAP in any 12 consecutive month period.

(c) The Department will evaluate the actual HAP emissions rates and may revise the allowable emissions specified above based upon demonstrated performance stack tests results and site-specific emissions data (as approved by the Department) that is obtained during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five years of operation through minor modification provided that the revised allowable emission limitation is not a result of a physical change or change in method of operation at the facility.

### # 006 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) NH3 slip emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 5 ppmv.

(b) The Department will evaluate the actual NH3 emissions rates and may revise the allowable emissions specified above based upon demonstrated performance (CEMS data, stack tests results, site-specific data, etc) during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five (5) years of operation through minor modification provided that the revised allowable emission limitation does not exceed levels at which the best available technology (BAT) was evaluated and is not a result of a physical change or change in method of operation at the facility.

**SECTION D. Source Level Plan Approval Requirements**

(c) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>.

**Fuel Restriction(s).****# 007 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall be fired on only natural gas. The sulfur content of the natural gas shall not exceed 0.4 grains/100 scf.

**Operation Hours Restriction(s).****# 008 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The durations of startups and shutdowns shall be minimized to the extent practicable.

(b) Startup and shutdown are defined as follows:

- i. Startup is identified as the period between the commencement of ignition and when the Mitsubishi combined-cycle powerblock reaches 50 percent operating level and when the Siemens combined-cycle powerblock reaches 60 percent operating level.
- ii. Shutdown is identified as the period between the time that the Mitsubishi combined-cycle powerblock drops below 50 percent operating level and the fuel is cut to the unit and between the time that the Siemens combined-cycle powerblock drops below 60 percent operating level and the fuel is cut to the unit. Shutdowns shall not exceed 30 minutes in duration.
- iii. Cold start is identified as a restart occurring 72 hours or more after shutdown and shall not exceed 90 minutes in duration.
- iv. Warm start is identified as a restart occurring between 12 hours to 72 hours after shutdown and shall not exceed 90 minutes in duration.
- v. Hot start is identified as a restart occurring less than 12 hours after shutdown and shall not exceed 75 minutes duration.

(c) The permittee shall record the time, date and duration of each startup and shutdown as well as the reason for each startup and shutdown.

**# 009 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the total hours of startups and shutdowns for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 500 hours in any 12 consecutive month period.

**II. TESTING REQUIREMENTS.****# 010 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b, within 180 days of the commencement of operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104, the permittee shall conduct EPA reference method testing on each respective unit for nitrogen oxides, carbon monoxide, ammonia slip, volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions.

(b) Subsequent EPA reference method testing for volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions shall be conducted every two years from the date of the previous tests. The testing frequency may be revised based upon the satisfactory demonstration of compliance with the emission limitations.

(c) All initial and subsequent stack testing shall be performed at the combined-cycle powerblock's maximum routine operating conditions that will demonstrate compliance with all emissions limitations specified in this plan approval.

**# 011 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4400]**

## SECTION D. Source Level Plan Approval Requirements

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests, regarding NOX ?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4400.

### # 012 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4405]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I perform the initial performance test if I have chosen to install a NOX-diluent CEMS?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4405.

### # 013 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4415]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests for sulfur?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4415.

## III. MONITORING REQUIREMENTS.

### # 014 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall install, certify, maintain and operate continuous emission monitoring systems (CEMS) for nitrogen oxides, carbon monoxide, carbon dioxide and ammonia emissions on the exhaust of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in accordance with all applicable requirements specified in 25 Pa. Code Chapter 139 and the Department's "Continuous Source Monitoring Manual." No CEMS may however be installed unless Phase I approval has first been obtained from the Department.

(b) The permittee shall submit a Phase I application to the Department for all CEMS to be associated with each combined-cycle powerblock at least 180 days prior to the expected commencement of operation date of each respective unit.

(c) The permittee shall implement a carbon dioxide mass emission monitoring system in accordance with the requirements in 40 CFR Sections 75.13 and 98.43.

### # 015 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the selective catalytic reduction catalysts incorporated into IDs C101, C102, C103 and C104 as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 016 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pre-control and post-control nitrogen oxides (expressed as NO<sub>2</sub>) emissions from Source IDs P101, P102, P103 and P104 shall be monitored and recorded by the feed-forward process control loop to ensure maximum control efficiency and minimum ammonia slip. Visual and audible alarms shall be utilized to indicate improper operation.

### # 017 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the oxidation catalyst incorporated into IDs C101A, C102A, C103A and C104A as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 018 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, a monitoring system shall be in each stack to monitor and record percent oxygen levels to ensure maximum combustion efficiency.

### # 019 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall

## SECTION D. Source Level Plan Approval Requirements

monitor and record the pressure differential across the inlet air filters for Source IDs P101, P102, P103 and P104 on a weekly basis to ensure proposer filter operation and efficiency.

### # 020 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Additional authority for this permit condition is also derived from the provisions specified in 40 CFR Section 60.4365]

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall use one of the following sources of information to monitor for SO<sub>2</sub> emissions from the combustion turbines and heat recovery steam generators incorporated into Source IDs P101, P102, P103 and P104.

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, demonstrating that the total sulfur content of the natural gas used is less than 0.4 grains of sulfur or less per 100 standard cubic feet and has potential sulfur emissions less than 0.0011 lb SO<sub>2</sub>/MMBtu heat input; or

(b) Representative fuel sampling data which shall show that the sulfur content of the fuel does not exceed potential sulfur emissions equal to 0.0011 lb SO<sub>2</sub>/MMBtu heat input. At a minimum, the amount of fuel sampling data specified in 40 CFR 75 section 2.3.1.4 or 2.3.2.4 of appendix D is required.

### # 021 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4340]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I demonstrate continuous compliance for NO<sub>x</sub> if I do not use water or steam injection?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Sections 60.4340.

### # 022 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4345]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4345.

### # 023 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4350]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I use data from the continuous emission monitoring equipment to identify excess emissions?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4350.

### # 024 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4360]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I determine the total sulfur content of the turbine's combustion fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4360.

### # 025 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4370]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How often must I determine the sulfur content of the fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4370.

## IV. RECORDKEEPING REQUIREMENTS.

### # 026 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology (BACT) of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology (BAT) provisions in 25 Pa. Code Sections 127.1 and 127.12, the permittee shall monitor and keep records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## SECTION D. Source Level Plan Approval Requirements

### # 027 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall keep accurate and comprehensive records of the monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, greenhouse gasses, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations.

(b) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## V. REPORTING REQUIREMENTS.

### # 028 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall submit the monthly emissions (including supporting documentation) of nitrogen oxides, carbon monoxide, volatile organic compound, greenhouse gas, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations on a semi-annual basis.

(b) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 029 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall submit the records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 030 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 96.21(b)(1)(ii).

### # 031 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 97.21(b)(1)(ii).

### # 032 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]

#### Subpart A - General Provisions

##### Address.

The submission of all requests, reports, applications, submittals and other communications required by this plan approval and federal regulations, must be made to both the Department of Environmental Protection and the Environmental Protection Agency. The Environmental Protection Agency copies may be sent to:

Associate Director  
Office of Enforcement and Compliance Assistance (3AP20)  
U.S. EPA, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

and

The Pennsylvania Department of Environmental Protection  
Air Quality Program Manager

## SECTION D. Source Level Plan Approval Requirements

208 W. Third Street, Suite 101  
Williamsport, PA 17701-6448

### # 033 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4375]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What reports must I submit?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4375.

### # 034 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4380]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### How are excess emissions and monitor downtime defined for NOX ?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4380.

### # 035 [40 CFR Part 72 Regulations on Permits §40 CFR 72.30]

#### Subpart C--Acid Rain Permit Application

##### Requirements to apply.

The permittee shall submit a complete Acid Rain permit application in accordance with 40 CFR Section 72.30(b)(2)(ii).

### # 036 [40 CFR Part 98 Mandatory Greenhouse Gas Reporting §40 CFR 98.1]

#### Subpart A - General Provision

##### Purpose and scope.

The permittee shall comply with the applicable Mandatory GHG Reporting requirements of 40 CFR Part 98.

(a) The facility shall comply with the requirements in 40 CFR Part 98 Subpart D, (40 CFR §§ 98.40 through 98.48).

## VI. WORK PRACTICE REQUIREMENTS.

### # 037 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, high efficiency inlet air filters shall be used in the combustion air inlet section of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104.

### # 038 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall operate and maintain the stationary combustion turbine, heat recovery steam generator, duct burners and air pollution control equipment associated with Source IDs P101, P102, P103 and P104, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

### # 039 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, all air-contaminant sources and control devices at the Moxie Patriot Generation Plant shall be maintained and operated in a manner consistent with good air pollution control practices and in accordance with the manufacturers' recommendations and maintenance plan.

### # 040 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of 40 CFR Section 52.21 and the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the heat input for each of the combined-cycle turbines incorporated in Source ID P101, P102, P103, and P104 shall not exceed 6735 Btu/kW-hr (lower heating value), without duct burner firing. In order to demonstrate compliance with this limitation, the permittee shall calculate the average net heat rate on an hourly basis consistent with equation F-20 and procedures provided in 40 CFR Part 75, Appendix F, § 5.5.2 and the results shall be corrected to ISO conditions (59 degrees F, 14.7 psia, and 67% humidity).

## SECTION D. Source Level Plan Approval Requirements

### # 041 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each powerblock associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors, SCR technology, Oxidation Catalyst technology and fired only on natural gas that meet the specifications of this plan approval.

### # 042 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combustion turbine associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors.

### # 043 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4333]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are my general requirements for complying with this subpart?

[Additional authority for this plan approval condition is derived from 40 CFR Section 60.4333(a)]

The permittee shall operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

## VII. ADDITIONAL REQUIREMENTS.

### # 044 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall commence construction of and operate only one of two options that are identified below.

(a) The first option consists of constructing two Mitsubishi M501GAC lean premix DLN natural-gas-fired combustion turbines (CT) and steam turbines (ST), where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired duct burners (DB) and heat recovery steam generators (HRSG). Each Mitsubishi train will be capable of producing approximately 472 megawatts (MW) of electricity and is incorporated into this plan approval as Source IDs P101 and P102. The maximum heat input rating of each CT associated with Source IDs P101 and P102 shall be no greater than 2905 MMBtu/hr (high heating value, HHV). Each DB associated with Source IDs P101 and P102 shall not have a maximum heat input rating above 387 MMBtu/hr (HHV).

(b) The second option consists of constructing two Siemens SGT6-8000H lean premix DLN natural-gas-fired CTs with STs, where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired DBs and HRSGs. Each Siemens train will be capable of producing approximately 458 MW of electricity and incorporated into this plan approval as Source IDs P103 and P104. The maximum heat input rating of each CT associated with Source IDs P103 and P104 shall be no greater than 3007 MMBtu/hr (HHV). Each DB associated with Source ID P103 and P104 shall not have a maximum heat input rating above 164 MMBtu/hr (HHV).

(c) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, only two combined-cycle powerblocks shall be constructed and operated from the options identified in this condition. The two combined-cycle powerblocks chosen by the permittee shall be either the two 472 MW combined-cycle powerblocks incorporated into Source IDs P101 and P102 or the two 458 MW combined-cycle powerblocks incorporated into Source IDs P103 and P104.

### # 045 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The Department will evaluate the actual emission rates and may revise the allowable emission limitations based upon demonstrated performance (CEMS data, stack tests results), and/or subsequently promulgated applicable requirements during the first five years of operation. Any revision of the allowable emission limitations shall be accomplished after five



## SECTION D. Source Level Plan Approval Requirements

years of operation by minor modification provided that the revised allowable emission limitations do not exceed levels at which the lowest achievable emission rate (LAER), best available control technology (BACT) and best available technology (BAT) were evaluated, do not exceed the level at which the facility impacts were modeled, and that are not a result of a physical change or change in method of operation at the facility.

### # 046 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) Within 30 days of the selection of the specific manufacturer and model of the combined-cycle powerblock option (Source IDs P101 and P102 or Source IDs P103 or P104), the permittee shall submit specifications for the selected combined-cycle powerblocks to the Department for review and final approval. These specifications shall include the maximum rated heat input of the combustion turbine and duct burner, the make and model of the unit, design steam pressure, and any other information pertinent to the combined-cycle powerblocks' performance.

(b) In order for the selected combined-cycle powerblocks to be given final approval by the Department, their specifications must be determined by the Department to be equivalent to those contained in the application and supplemental materials submitted for plan approval.

### # 047 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the new source review provisions in 25 Pa. Code Sections 127.201 through 127.217, if option 1 is chosen, the permittee shall purchase and apply 247 tons per year of NO<sub>x</sub> emission reduction credits (ERCs) and 77.7 tons per year of VOC ERCs prior to commencement of operation of Source IDs P101 and P102 at the facility to offset the total of the net increase in potential to emit. The permittee shall certify to the Northcentral Regional Office of the Department the amount of ERCs purchased, the company from which the ERCs were purchased, and the effective date of transfer of the ERCs. The purchase and application of the NO<sub>x</sub> and VOC ERCs shall be tracked in the Department's ERC registry system. Failure to purchase and apply the ERCs prior to commencement of operation at the facility shall make this plan approval null and void.

### # 048 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 96 and 25 Pa. Code Chapter 145 Subchapter D for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 049 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 97 for each of the powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 050 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4300]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What is the purpose of this subpart?

The combustion turbines, heat recovery steam generators and duct burners associated with each combined-cycle powerblock that are incorporated into Source IDs P101, P102, P103 and P104 shall comply with all applicable requirements of Subpart KKKK of the Standards of Performance for New Stationary Sources, 40 CFR 60.4300 through 60.4420 (Standards of Performance for Stationary Combustion Turbines).

### # 051 [40 CFR Part 72 Regulations on Permits §40 CFR 72.1]

#### Subpart A--Acid Rain Program General Provisions

##### Purpose and scope.

The permittee shall comply with the Title IV Acid Rain Program 40 CFR Parts 72-78.

## SECTION D. Source Level Plan Approval Requirements

Source ID: P102

Source Name: 472 MW COMBUSTION TURBINE &amp; DUCT BURNER

Source Capacity/Throughput:



### I. RESTRICTIONS.

#### Emission Restriction(s).

##### # 001 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit more than 117.2 tons of carbon monoxide in any 12 consecutive month period, 111.2 tons of nitrogen oxides in any 12 consecutive month period, 15.5 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.4 tons of sulfuric acid mist in any 12 consecutive month period, 54.0 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 102.9 tons of ammonia in any 12 consecutive month period, 33.9 tons of volatile organic compounds in any 12 consecutive month period, 1,572,362 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit more than 87.4 tons of carbon monoxide in any 12 consecutive month period, 109.0 tons of nitrogen oxides in any 12 consecutive month period, 14.6 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.2 tons of sulfuric acid mist in any 12 consecutive month period, 56.7 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 100.7 tons of ammonia in any 12 consecutive month period, 30.2 tons of volatile organic compounds in any 12 consecutive month period, 1,401,333 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

##### # 002 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

[Compliance with the nitrogen oxides and sulfur dioxide emissions limits in this condition will assure compliance with the nitrogen oxide and sulfur dioxide standards specified in 40 CFR Sections 60.4320 and 60.4330, respectively, as well as the limitations of 25 Pa. Code Chapter 123, relating to particulate matter emissions and sulfur compound emissions]

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) Emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed the limits specified below:

- i. Carbon monoxide: 2.0 ppm<sub>dv</sub>
- ii. Nitrogen oxides (expressed as NO<sub>2</sub>): 2.0 ppm<sub>dv</sub>
- iii. Volatile organic compounds: 1.0 ppm<sub>dv</sub> (without duct burner) and 1.5 ppm<sub>dv</sub> (with duct burner)
- iv. Sulfur oxides (expressed as SO<sub>2</sub>): 0.0011 lb/MMBtu
- v. Total (filterable and condensable) Particulate Matter: 0.0057 lb/MMBtu
- vi. Total PM<sub>10</sub>: 0.0057 lb/MMBtu
- vii. Total PM<sub>2.5</sub>: 0.0057 lb/MMBtu
- viii. H<sub>2</sub>SO<sub>4</sub>: 0.0005 lb/MMBtu

(b) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>

(c) The above emissions limits shall apply at all times except for periods of startup and shutdown.

**SECTION D. Source Level Plan Approval Requirements****# 003 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, the emission of visible air contaminants from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not be in excess of 10% opacity for any 3-minute block and 10% opacity for any 6-minute block period during startup and shutdown.

**# 004 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 shall not emit more than 15.5 pounds of carbon monoxide per hour, 25.4 pounds of nitrogen oxides per hour and 23.5 pounds of ammonia per hour in any 1-hour period, as well as 3.5 pounds of sulfur dioxide per hour, 1.5 pounds of sulfuric acid mist per hour, 12.1 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 6.3 pounds of volatile organic compounds per hour.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblocks incorporated into Source IDs P103 and P104 shall not emit more than 15.2 pounds of carbon monoxide per hour, 24.9 pounds of nitrogen oxides per hour and 23.0 pounds of ammonia per hour in any 1-hour period, as well as 3.3 pounds of sulfur dioxide per hour, 1.4 pounds of sulfuric acid mist per hour, 12.9 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 5.4 pounds of volatile organic compounds per hour.

(c) The emissions limitations specified above in this condition do not include the air contaminant pollutants emitted during startup and shutdown.

**# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total hazardous air pollutants (HAP) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total HAP in any 12 consecutive month period.

(c) The Department will evaluate the actual HAP emissions rates and may revise the allowable emissions specified above based upon demonstrated performance stack tests results and site-specific emissions data (as approved by the Department) that is obtained during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five years of operation through minor modification provided that the revised allowable emission limitation is not a result of a physical change or change in method of operation at the facility.

**# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) NH3 slip emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 5 ppmv.

(b) The Department will evaluate the actual NH3 emissions rates and may revise the allowable emissions specified above based upon demonstrated performance (CEMS data, stack tests results, site-specific data, etc) during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five (5) years of operation through minor modification provided that the revised allowable emission limitation does not exceed levels at which the best available technology (BAT) was evaluated and is not a result of a physical change or change in method of operation at the facility.

## SECTION D. Source Level Plan Approval Requirements

(c) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>.

### Fuel Restriction(s).

#### # 007 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall be fired on only natural gas. The sulfur content of the natural gas shall not exceed 0.4 grains/100 scf.

### Operation Hours Restriction(s).

#### # 008 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

(a) The durations of startups and shutdowns shall be minimized to the extent practicable.

(b) Startup and shutdown are defined as follows:

- i. Startup is identified as the period between the commencement of ignition and when the Mitsubishi combined-cycle powerblock reaches 50 percent operating level and when the Siemens combined-cycle powerblock reaches 60 percent operating level.
- ii. Shutdown is identified as the period between the time that the Mitsubishi combined-cycle powerblock drops below 50 percent operating level and the fuel is cut to the unit and between the time that the Siemens combined-cycle powerblock drops below 60 percent operating level and the fuel is cut to the unit. Shutdowns shall not exceed 30 minutes in duration.
- iii. Cold start is identified as a restart occurring 72 hours or more after shutdown and shall not exceed 90 minutes in duration.
- iv. Warm start is identified as a restart occurring between 12 hours to 72 hours after shutdown and shall not exceed 90 minutes in duration.
- v. Hot start is identified as a restart occurring less than 12 hours after shutdown and shall not exceed 75 minutes duration.

(c) The permittee shall record the time, date and duration of each startup and shutdown as well as the reason for each startup and shutdown.

#### # 009 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the total hours of startups and shutdowns for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 500 hours in any 12 consecutive month period.

## II. TESTING REQUIREMENTS.

#### # 010 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

(a) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b, within 180 days of the commencement of operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104, the permittee shall conduct EPA reference method testing on each respective unit for nitrogen oxides, carbon monoxide, ammonia slip, volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions.

(b) Subsequent EPA reference method testing for volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions shall be conducted every two years from the date of the previous tests. The testing frequency may be revised based upon the satisfactory demonstration of compliance with the emission limitations.

(c) All initial and subsequent stack testing shall be performed at the combined-cycle powerblock's maximum routine operating conditions that will demonstrate compliance with all emissions limitations specified in this plan approval.

#### # 011 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4400]

## SECTION D. Source Level Plan Approval Requirements

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests, regarding NOX ?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4400.

### # 012 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4405]

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I perform the initial performance test if I have chosen to install a NOX-diluent CEMS?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4405.

### # 013 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4415]

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests for sulfur?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4415.

## III. MONITORING REQUIREMENTS.

### # 014 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall install, certify, maintain and operate continuous emission monitoring systems (CEMS) for nitrogen oxides, carbon monoxide, carbon dioxide and ammonia emissions on the exhaust of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in accordance with all applicable requirements specified in 25 Pa. Code Chapter 139 and the Department's "Continuous Source Monitoring Manual." No CEMS may however be installed unless Phase I approval has first been obtained from the Department.

(b) The permittee shall submit a Phase I application to the Department for all CEMS to be associated with each combined-cycle powerblock at least 180 days prior to the expected commencement of operation date of each respective unit.

(c) The permittee shall implement a carbon dioxide mass emission monitoring system in accordance with the requirements in 40 CFR Sections 75.13 and 98.43.

### # 015 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the selective catalytic reduction catalysts incorporated into IDs C101, C102, C103 and C104 as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 016 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pre-control and post-control nitrogen oxides (expressed as NO<sub>2</sub>) emissions from Source IDs P101, P102, P103 and P104 shall be monitored and recorded by the feed-forward process control loop to ensure maximum control efficiency and minimum ammonia slip. Visual and audible alarms shall be utilized to indicate improper operation.

### # 017 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the oxidation catalyst incorporated into IDs C101A, C102A, C103A and C104A as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 018 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, a monitoring system shall be in each stack to monitor and record percent oxygen levels to ensure maximum combustion efficiency.

### # 019 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall

## SECTION D. Source Level Plan Approval Requirements

monitor and record the pressure differential across the inlet air filters for Source IDs P101, P102, P103 and P104 on a weekly basis to ensure proposer filter operation and efficiency.

### # 020 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Additional authority for this permit condition is also derived from the provisions specified in 40 CFR Section 60.4365]

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall use one of the following sources of information to monitor for SO<sub>2</sub> emissions from the combustion turbines and heat recovery steam generators incorporated into Source IDs P101, P102, P103 and P104.

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, demonstrating that the total sulfur content of the natural gas used is less than 0.4 grains of sulfur or less per 100 standard cubic feet and has potential sulfur emissions less than 0.0011 lb SO<sub>2</sub>/MMBtu heat input; or

(b) Representative fuel sampling data which shall show that the sulfur content of the fuel does not exceed potential sulfur emissions equal to 0.0011 lb SO<sub>2</sub>/MMBtu heat input. At a minimum, the amount of fuel sampling data specified in 40 CFR 75 section 2.3.1.4 or 2.3.2.4 of appendix D is required.

### # 021 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4340]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I demonstrate continuous compliance for NO<sub>x</sub> if I do not use water or steam injection?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Sections 60.4340.

### # 022 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4345]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4345.

### # 023 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4350]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I use data from the continuous emission monitoring equipment to identify excess emissions?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4350.

### # 024 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4360]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I determine the total sulfur content of the turbine's combustion fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4360.

### # 025 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4370]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How often must I determine the sulfur content of the fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4370.

## IV. RECORDKEEPING REQUIREMENTS.

### # 026 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology (BACT) of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology (BAT) provisions in 25 Pa. Code Sections 127.1 and 127.12, the permittee shall monitor and keep records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## SECTION D. Source Level Plan Approval Requirements

### # 027 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall keep accurate and comprehensive records of the monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, greenhouse gasses, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations.

(b) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## V. REPORTING REQUIREMENTS.

### # 028 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall submit the monthly emissions (including supporting documentation) of nitrogen oxides, carbon monoxide, volatile organic compound, greenhouse gas, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations on a semi-annual basis.

(b) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 029 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall submit the records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 030 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 96.21(b)(1)(ii).

### # 031 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 97.21(b)(1)(ii).

### # 032 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]

#### Subpart A - General Provisions

##### Address.

The submission of all requests, reports, applications, submittals and other communications required by this plan approval and federal regulations, must be made to both the Department of Environmental Protection and the Environmental Protection Agency. The Environmental Protection Agency copies may be sent to:

Associate Director  
Office of Enforcement and Compliance Assistance (3AP20)  
U.S. EPA, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

and

The Pennsylvania Department of Environmental Protection  
Air Quality Program Manager

## SECTION D. Source Level Plan Approval Requirements

208 W. Third Street, Suite 101  
Williamsport, PA 17701-6448

### # 033 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4375]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What reports must I submit?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4375.

### # 034 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4380]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### How are excess emissions and monitor downtime defined for NOX ?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4380.

### # 035 [40 CFR Part 72 Regulations on Permits §40 CFR 72.30]

#### Subpart C--Acid Rain Permit Application

##### Requirements to apply.

The permittee shall submit a complete Acid Rain permit application in accordance with 40 CFR Section 72.30(b)(2)(ii).

### # 036 [40 CFR Part 98 Mandatory Greenhouse Gas Reporting §40 CFR 98.1]

#### Subpart A - General Provision

##### Purpose and scope.

The permittee shall comply with the applicable Mandatory GHG Reporting requirements of 40 CFR Part 98.

(a) The facility shall comply with the requirements in 40 CFR Part 98 Subpart D, (40 CFR §§ 98.40 through 98.48).

## VI. WORK PRACTICE REQUIREMENTS.

### # 037 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, high efficiency inlet air filters shall be used in the combustion air inlet section of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104.

### # 038 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall operate and maintain the stationary combustion turbine, heat recovery steam generator, duct burners and air pollution control equipment associated with Source IDs P101, P102, P103 and P104, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

### # 039 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, all air-contaminant sources and control devices at the Moxie Patriot Generation Plant shall be maintained and operated in a manner consistent with good air pollution control practices and in accordance with the manufacturers' recommendations and maintenance plan.

### # 040 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of 40 CFR Section 52.21 and the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the heat input for each of the combined-cycle turbines incorporated in Source ID P101, P102, P103, and P104 shall not exceed 6735 Btu/kW-hr (lower heating value), without duct burner firing. In order to demonstrate compliance with this limitation, the permittee shall calculate the average net heat rate on an hourly basis consistent with equation F-20 and procedures provided in 40 CFR Part 75, Appendix F, § 5.5.2 and the results shall be corrected to ISO conditions (59 degrees F, 14.7 psia, and 67% humidity).



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### # 041 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each powerblock associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors, SCR technology, Oxidation Catalyst technology and fired only on natural gas that meet the specifications of this plan approval.

### # 042 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combustion turbine associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors.

### # 043 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4333]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are my general requirements for complying with this subpart?

[Additional authority for this plan approval condition is derived from 40 CFR Section 60.4333(a)]

The permittee shall operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

## VII. ADDITIONAL REQUIREMENTS.

### # 044 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall commence construction of and operate only one of two options that are identified below.

(a) The first option consists of constructing two Mitsubishi M501GAC lean premix DLN natural-gas-fired combustion turbines (CT) and steam turbines (ST), where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired duct burners (DB) and heat recovery steam generators (HRSG). Each Mitsubishi train will be capable of producing approximately 472 megawatts (MW) of electricity and is incorporated into this plan approval as Source IDs P101 and P102. The maximum heat input rating of each CT associated with Source IDs P101 and P102 shall be no greater than 2905 MMBtu/hr (high heating value, HHV). Each DB associated with Source IDs P101 and P102 shall not have a maximum heat input rating above 387 MMBtu/hr (HHV).

(b) The second option consists of constructing two Siemens SGT6-8000H lean premix DLN natural-gas-fired CTs with STs, where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired DBs and HRSGs. Each Siemens train will be capable of producing approximately 458 MW of electricity and incorporated into this plan approval as Source IDs P103 and P104. The maximum heat input rating of each CT associated with Source IDs P103 and P104 shall be no greater than 3007 MMBtu/hr (HHV). Each DB associated with Source ID P103 and P104 shall not have a maximum heat input rating above 164 MMBtu/hr (HHV).

(c) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, only two combined-cycle powerblocks shall be constructed and operated from the options identified in this condition. The two combined-cycle powerblocks chosen by the permittee shall be either the two 472 MW combined-cycle powerblocks incorporated into Source IDs P101 and P102 or the two 458 MW combined-cycle powerblocks incorporated into Source IDs P103 and P104.

### # 045 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The Department will evaluate the actual emission rates and may revise the allowable emission limitations based upon demonstrated performance (CEMS data, stack tests results), and/or subsequently promulgated applicable requirements during the first five years of operation. Any revision of the allowable emission limitations shall be accomplished after five

## SECTION D. Source Level Plan Approval Requirements

years of operation by minor modification provided that the revised allowable emission limitations do not exceed levels at which the lowest achievable emission rate (LAER), best available control technology (BACT) and best available technology (BAT) were evaluated, do not exceed the level at which the facility impacts were modeled, and that are not a result of a physical change or change in method of operation at the facility.

### # 046 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) Within 30 days of the selection of the specific manufacturer and model of the combined-cycle powerblock option (Source IDs P101 and P102 or Source IDs P103 or P104), the permittee shall submit specifications for the selected combined-cycle powerblocks to the Department for review and final approval. These specifications shall include the maximum rated heat input of the combustion turbine and duct burner, the make and model of the unit, design steam pressure, and any other information pertinent to the combined-cycle powerblocks' performance.

(b) In order for the selected combined-cycle powerblocks to be given final approval by the Department, their specifications must be determined by the Department to be equivalent to those contained in the application and supplemental materials submitted for plan approval.

### # 047 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the new source review provisions in 25 Pa. Code Sections 127.201 through 127.217, if option 1 is chosen, the permittee shall purchase and apply 247 tons per year of NO<sub>x</sub> emission reduction credits (ERCs) and 77.7 tons per year of VOC ERCs prior to commencement of operation of Source IDs P101 and P102 at the facility to offset the total of the net increase in potential to emit. The permittee shall certify to the Northcentral Regional Office of the Department the amount of ERCs purchased, the company from which the ERCs were purchased, and the effective date of transfer of the ERCs. The purchase and application of the NO<sub>x</sub> and VOC ERCs shall be tracked in the Department's ERC registry system. Failure to purchase and apply the ERCs prior to commencement of operation at the facility shall make this plan approval null and void.

### # 048 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 96 and 25 Pa. Code Chapter 145 Subchapter D for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 049 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 97 for each of the powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 050 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4300]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What is the purpose of this subpart?

The combustion turbines, heat recovery steam generators and duct burners associated with each combined-cycle powerblock that are incorporated into Source IDs P101, P102, P103 and P104 shall comply with all applicable requirements of Subpart KKKK of the Standards of Performance for New Stationary Sources, 40 CFR 60.4300 through 60.4420 (Standards of Performance for Stationary Combustion Turbines).

### # 051 [40 CFR Part 72 Regulations on Permits §40 CFR 72.1]

#### Subpart A--Acid Rain Program General Provisions

##### Purpose and scope.

The permittee shall comply with the Title IV Acid Rain Program 40 CFR Parts 72-78.

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Source ID: P103

Source Name: 458 MW COMBUSTION TURBINE &amp; DUCT BURNER

Source Capacity/Throughput:



### I. RESTRICTIONS.

#### Emission Restriction(s).

##### # 001 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit more than 117.2 tons of carbon monoxide in any 12 consecutive month period, 111.2 tons of nitrogen oxides in any 12 consecutive month period, 15.5 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.4 tons of sulfuric acid mist in any 12 consecutive month period, 54.0 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 102.9 tons of ammonia in any 12 consecutive month period, 33.9 tons of volatile organic compounds in any 12 consecutive month period, 1,572,362 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit more than 87.4 tons of carbon monoxide in any 12 consecutive month period, 109.0 tons of nitrogen oxides in any 12 consecutive month period, 14.6 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.2 tons of sulfuric acid mist in any 12 consecutive month period, 56.7 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 100.7 tons of ammonia in any 12 consecutive month period, 30.2 tons of volatile organic compounds in any 12 consecutive month period, 1,401,333 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

##### # 002 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

[Compliance with the nitrogen oxides and sulfur dioxide emissions limits in this condition will assure compliance with the nitrogen oxide and sulfur dioxide standards specified in 40 CFR Sections 60.4320 and 60.4330, respectively, as well as the limitations of 25 Pa. Code Chapter 123, relating to particulate matter emissions and sulfur compound emissions]

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) Emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed the limits specified below:

- i. Carbon monoxide: 2.0 ppm<sub>dv</sub>
- ii. Nitrogen oxides (expressed as NO<sub>2</sub>): 2.0 ppm<sub>dv</sub>
- iii. Volatile organic compounds: 1.0 ppm<sub>dv</sub> (without duct burner) and 1.5 ppm<sub>dv</sub> (with duct burner)
- iv. Sulfur oxides (expressed as SO<sub>2</sub>): 0.0011 lb/MMBtu
- v. Total (filterable and condensable) Particulate Matter: 0.0057 lb/MMBtu
- vi. Total PM<sub>10</sub>: 0.0057 lb/MMBtu
- vii. Total PM<sub>2.5</sub>: 0.0057 lb/MMBtu
- viii. H<sub>2</sub>SO<sub>4</sub>: 0.0005 lb/MMBtu

(b) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>

(c) The above emissions limits shall apply at all times except for periods of startup and shutdown.

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### # 003 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, the emission of visible air contaminants from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not be in excess of 10% opacity for any 3-minute block and 10% opacity for any 6-minute block period during startup and shutdown.

### # 004 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 shall not emit more than 15.5 pounds of carbon monoxide per hour, 25.4 pounds of nitrogen oxides per hour and 23.5 pounds of ammonia per hour in any 1-hour period, as well as 3.5 pounds of sulfur dioxide per hour, 1.5 pounds of sulfuric acid mist per hour, 12.1 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 6.3 pounds of volatile organic compounds per hour.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblocks incorporated into Source IDs P103 and P104 shall not emit more than 15.2 pounds of carbon monoxide per hour, 24.9 pounds of nitrogen oxides per hour and 23.0 pounds of ammonia per hour in any 1-hour period, as well as 3.3 pounds of sulfur dioxide per hour, 1.4 pounds of sulfuric acid mist per hour, 12.9 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 5.4 pounds of volatile organic compounds per hour.

(c) The emissions limitations specified above in this condition do not include the air contaminant pollutants emitted during startup and shutdown.

### # 005 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total hazardous air pollutants (HAP) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total HAP in any 12 consecutive month period.

(c) The Department will evaluate the actual HAP emissions rates and may revise the allowable emissions specified above based upon demonstrated performance stack tests results and site-specific emissions data (as approved by the Department) that is obtained during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five years of operation through minor modification provided that the revised allowable emission limitation is not a result of a physical change or change in method of operation at the facility.

### # 006 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) NH3 slip emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 5 ppmdv.

(b) The Department will evaluate the actual NH3 emissions rates and may revise the allowable emissions specified above based upon demonstrated performance (CEMS data, stack tests results, site-specific data, etc) during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five (5) years of operation through minor modification provided that the revised allowable emission limitation does not exceed levels at which the best available technology (BAT) was evaluated and is not a result of a physical change or change in method of operation at the facility.

**SECTION D. Source Level Plan Approval Requirements**

(c) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>.

**Fuel Restriction(s).****# 007 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall be fired on only natural gas. The sulfur content of the natural gas shall not exceed 0.4 grains/100 scf.

**Operation Hours Restriction(s).****# 008 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The durations of startups and shutdowns shall be minimized to the extent practicable.

(b) Startup and shutdown are defined as follows:

- i. Startup is identified as the period between the commencement of ignition and when the Mitsubishi combined-cycle powerblock reaches 50 percent operating level and when the Siemens combined-cycle powerblock reaches 60 percent operating level.
- ii. Shutdown is identified as the period between the time that the Mitsubishi combined-cycle powerblock drops below 50 percent operating level and the fuel is cut to the unit and between the time that the Siemens combined-cycle powerblock drops below 60 percent operating level and the fuel is cut to the unit. Shutdowns shall not exceed 30 minutes in duration.
- iii. Cold start is identified as a restart occurring 72 hours or more after shutdown and shall not exceed 90 minutes in duration.
- iv. Warm start is identified as a restart occurring between 12 hours to 72 hours after shutdown and shall not exceed 90 minutes in duration.
- v. Hot start is identified as a restart occurring less than 12 hours after shutdown and shall not exceed 75 minutes duration.

(c) The permittee shall record the time, date and duration of each startup and shutdown as well as the reason for each startup and shutdown.

**# 009 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the total hours of startups and shutdowns for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 500 hours in any 12 consecutive month period.

**II. TESTING REQUIREMENTS.****# 010 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b, within 180 days of the commencement of operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104, the permittee shall conduct EPA reference method testing on each respective unit for nitrogen oxides, carbon monoxide, ammonia slip, volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions.

(b) Subsequent EPA reference method testing for volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions shall be conducted every two years from the date of the previous tests. The testing frequency may be revised based upon the satisfactory demonstration of compliance with the emission limitations.

(c) All initial and subsequent stack testing shall be performed at the combined-cycle powerblock's maximum routine operating conditions that will demonstrate compliance with all emissions limitations specified in this plan approval.

**# 011 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4400]**

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### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests, regarding NOX ?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4400.

### # 012 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4405]

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I perform the initial performance test if I have chosen to install a NOX-diluent CEMS?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4405.

### # 013 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4415]

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests for sulfur?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4415.

## III. MONITORING REQUIREMENTS.

### # 014 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall install, certify, maintain and operate continuous emission monitoring systems (CEMS) for nitrogen oxides, carbon monoxide, carbon dioxide and ammonia emissions on the exhaust of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in accordance with all applicable requirements specified in 25 Pa. Code Chapter 139 and the Department's "Continuous Source Monitoring Manual." No CEMS may however be installed unless Phase I approval has first been obtained from the Department.

(b) The permittee shall submit a Phase I application to the Department for all CEMS to be associated with each combined-cycle powerblock at least 180 days prior to the expected commencement of operation date of each respective unit.

(c) The permittee shall implement a carbon dioxide mass emission monitoring system in accordance with the requirements in 40 CFR Sections 75.13 and 98.43.

### # 015 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the selective catalytic reduction catalysts incorporated into IDs C101, C102, C103 and C104 as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 016 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pre-control and post-control nitrogen oxides (expressed as NO<sub>2</sub>) emissions from Source IDs P101, P102, P103 and P104 shall be monitored and recorded by the feed-forward process control loop to ensure maximum control efficiency and minimum ammonia slip. Visual and audible alarms shall be utilized to indicate improper operation.

### # 017 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the oxidation catalyst incorporated into IDs C101A, C102A, C103A and C104A as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 018 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, a monitoring system shall be in each stack to monitor and record percent oxygen levels to ensure maximum combustion efficiency.

### # 019 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall

## SECTION D. Source Level Plan Approval Requirements

monitor and record the pressure differential across the inlet air filters for Source IDs P101, P102, P103 and P104 on a weekly basis to ensure proposer filter operation and efficiency.

### # 020 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Additional authority for this permit condition is also derived from the provisions specified in 40 CFR Section 60.4365]

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall use one of the following sources of information to monitor for SO<sub>2</sub> emissions from the combustion turbines and heat recovery steam generators incorporated into Source IDs P101, P102, P103 and P104.

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, demonstrating that the total sulfur content of the natural gas used is less than 0.4 grains of sulfur or less per 100 standard cubic feet and has potential sulfur emissions less than 0.0011 lb SO<sub>2</sub>/MMBtu heat input; or

(b) Representative fuel sampling data which shall show that the sulfur content of the fuel does not exceed potential sulfur emissions equal to 0.0011 lb SO<sub>2</sub>/MMBtu heat input. At a minimum, the amount of fuel sampling data specified in 40 CFR 75 section 2.3.1.4 or 2.3.2.4 of appendix D is required.

### # 021 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4340]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I demonstrate continuous compliance for NO<sub>x</sub> if I do not use water or steam injection?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Sections 60.4340.

### # 022 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4345]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4345.

### # 023 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4350]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I use data from the continuous emission monitoring equipment to identify excess emissions?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4350.

### # 024 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4360]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I determine the total sulfur content of the turbine's combustion fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4360.

### # 025 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4370]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How often must I determine the sulfur content of the fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4370.

## IV. RECORDKEEPING REQUIREMENTS.

### # 026 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology (BACT) of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology (BAT) provisions in 25 Pa. Code Sections 127.1 and 127.12, the permittee shall monitor and keep records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

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### # 027 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall keep accurate and comprehensive records of the monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, greenhouse gasses, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations.

(b) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## V. REPORTING REQUIREMENTS.

### # 028 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall submit the monthly emissions (including supporting documentation) of nitrogen oxides, carbon monoxide, volatile organic compound, greenhouse gas, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations on a semi-annual basis.

(b) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 029 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall submit the records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 030 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 96.21(b)(1)(ii).

### # 031 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 97.21(b)(1)(ii).

### # 032 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]

#### Subpart A - General Provisions

##### Address.

The submission of all requests, reports, applications, submittals and other communications required by this plan approval and federal regulations, must be made to both the Department of Environmental Protection and the Environmental Protection Agency. The Environmental Protection Agency copies may be sent to:

Associate Director  
Office of Enforcement and Compliance Assistance (3AP20)  
U.S. EPA, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

and

The Pennsylvania Department of Environmental Protection  
Air Quality Program Manager



## SECTION D. Source Level Plan Approval Requirements

208 W. Third Street, Suite 101  
Williamsport, PA 17701-6448

### # 033 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4375]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What reports must I submit?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4375.

### # 034 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4380]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### How are excess emissions and monitor downtime defined for NOX ?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4380.

### # 035 [40 CFR Part 72 Regulations on Permits §40 CFR 72.30]

#### Subpart C--Acid Rain Permit Application

##### Requirements to apply.

The permittee shall submit a complete Acid Rain permit application in accordance with 40 CFR Section 72.30(b)(2)(ii).

### # 036 [40 CFR Part 98 Mandatory Greenhouse Gas Reporting §40 CFR 98.1]

#### Subpart A - General Provision

##### Purpose and scope.

The permittee shall comply with the applicable Mandatory GHG Reporting requirements of 40 CFR Part 98.

(a) The facility shall comply with the requirements in 40 CFR Part 98 Subpart D, (40 CFR §§ 98.40 through 98.48).

## VI. WORK PRACTICE REQUIREMENTS.

### # 037 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, high efficiency inlet air filters shall be used in the combustion air inlet section of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104.

### # 038 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall operate and maintain the stationary combustion turbine, heat recovery steam generator, duct burners and air pollution control equipment associated with Source IDs P101, P102, P103 and P104, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

### # 039 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, all air-contaminant sources and control devices at the Moxie Patriot Generation Plant shall be maintained and operated in a manner consistent with good air pollution control practices and in accordance with the manufacturers' recommendations and maintenance plan.

### # 040 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of 40 CFR Section 52.21 and the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the heat input for each of the combined-cycle turbines incorporated in Source ID P101, P102, P103, and P104 shall not exceed 6735 Btu/kW-hr (lower heating value), without duct burner firing. In order to demonstrate compliance with this limitation, the permittee shall calculate the average net heat rate on an hourly basis consistent with equation F-20 and procedures provided in 40 CFR Part 75, Appendix F, § 5.5.2 and the results shall be corrected to ISO conditions (59 degrees F, 14.7 psia, and 67% humidity).

## SECTION D. Source Level Plan Approval Requirements

### # 041 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each powerblock associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors, SCR technology, Oxidation Catalyst technology and fired only on natural gas that meet the specifications of this plan approval.

### # 042 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combustion turbine associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors.

### # 043 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4333]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are my general requirements for complying with this subpart?

[Additional authority for this plan approval condition is derived from 40 CFR Section 60.4333(a)]

The permittee shall operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

## VII. ADDITIONAL REQUIREMENTS.

### # 044 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall commence construction of and operate only one of two options that are identified below.

(a) The first option consists of constructing two Mitsubishi M501GAC lean premix DLN natural-gas-fired combustion turbines (CT) and steam turbines (ST), where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired duct burners (DB) and heat recovery steam generators (HRSG). Each Mitsubishi train will be capable of producing approximately 472 megawatts (MW) of electricity and is incorporated into this plan approval as Source IDs P101 and P102. The maximum heat input rating of each CT associated with Source IDs P101 and P102 shall be no greater than 2905 MMBtu/hr (high heating value, HHV). Each DB associated with Source IDs P101 and P102 shall not have a maximum heat input rating above 387 MMBtu/hr (HHV).

(b) The second option consists of constructing two Siemens SGT6-8000H lean premix DLN natural-gas-fired CTs with STs, where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired DBs and HRSGs. Each Siemens train will be capable of producing approximately 458 MW of electricity and incorporated into this plan approval as Source IDs P103 and P104. The maximum heat input rating of each CT associated with Source IDs P103 and P104 shall be no greater than 3007 MMBtu/hr (HHV). Each DB associated with Source ID P103 and P104 shall not have a maximum heat input rating above 164 MMBtu/hr (HHV).

(c) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, only two combined-cycle powerblocks shall be constructed and operated from the options identified in this condition. The two combined-cycle powerblocks chosen by the permittee shall be either the two 472 MW combined-cycle powerblocks incorporated into Source IDs P101 and P102 or the two 458 MW combined-cycle powerblocks incorporated into Source IDs P103 and P104.

### # 045 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The Department will evaluate the actual emission rates and may revise the allowable emission limitations based upon demonstrated performance (CEMS data, stack tests results), and/or subsequently promulgated applicable requirements during the first five years of operation. Any revision of the allowable emission limitations shall be accomplished after five

## SECTION D. Source Level Plan Approval Requirements

years of operation by minor modification provided that the revised allowable emission limitations do not exceed levels at which the lowest achievable emission rate (LAER), best available control technology (BACT) and best available technology (BAT) were evaluated, do not exceed the level at which the facility impacts were modeled, and that are not a result of a physical change or change in method of operation at the facility.

### # 046 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) Within 30 days of the selection of the specific manufacturer and model of the combined-cycle powerblock option (Source IDs P101 and P102 or Source IDs P103 or P104), the permittee shall submit specifications for the selected combined-cycle powerblocks to the Department for review and final approval. These specifications shall include the maximum rated heat input of the combustion turbine and duct burner, the make and model of the unit, design steam pressure, and any other information pertinent to the combined-cycle powerblocks' performance.

(b) In order for the selected combined-cycle powerblocks to be given final approval by the Department, their specifications must be determined by the Department to be equivalent to those contained in the application and supplemental materials submitted for plan approval.

### # 047 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the new source review provisions in 25 Pa. Code Sections 127.201 through 127.217, if option 2 is chosen, the permittee shall purchase and apply 242 tons per year of NO<sub>x</sub> emission reduction credits (ERCs) and 69.2 tons per year of VOC ERCs prior to the commencement of operation of Source IDs P103 and P104 at the facility to offset the total of the net increase in potential to emit. The permittee shall certify to the Northcentral Regional Office of the Department the amount of ERCs purchased, the company from which the ERCs were purchased, and the effective date of transfer of the ERCs. The purchase and application of the NO<sub>x</sub> and VOC ERCs shall be tracked in the Department's ERC registry system. Failure to purchase and apply the ERCs prior to commencement of operation at the facility shall make this plan approval null and void.

### # 048 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 96 and 25 Pa. Code Chapter 145 Subchapter D for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 049 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 97 for each of the powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 050 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4300]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What is the purpose of this subpart?

The combustion turbines, heat recovery steam generators and duct burners associated with each combined-cycle powerblock that are incorporated into Source IDs P101, P102, P103 and P104 shall comply with all applicable requirements of Subpart KKKK of the Standards of Performance for New Stationary Sources, 40 CFR 60.4300 through 60.4420 (Standards of Performance for Stationary Combustion Turbines).

### # 051 [40 CFR Part 72 Regulations on Permits §40 CFR 72.1]

#### Subpart A--Acid Rain Program General Provisions

##### Purpose and scope.

The permittee shall comply with the Title IV Acid Rain Program 40 CFR Parts 72-78.

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Source ID: P104

Source Name: 458 MW COMBUSTION TURBINE &amp; DUCT BURNER

Source Capacity/Throughput:



### I. RESTRICTIONS.

#### Emission Restriction(s).

##### # 001 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit more than 117.2 tons of carbon monoxide in any 12 consecutive month period, 111.2 tons of nitrogen oxides in any 12 consecutive month period, 15.5 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.4 tons of sulfuric acid mist in any 12 consecutive month period, 54.0 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 102.9 tons of ammonia in any 12 consecutive month period, 33.9 tons of volatile organic compounds in any 12 consecutive month period, 1,572,362 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit more than 87.4 tons of carbon monoxide in any 12 consecutive month period, 109.0 tons of nitrogen oxides in any 12 consecutive month period, 14.6 tons of sulfur oxides (expressed as SO<sub>2</sub>) in any 12 consecutive month period, 2.2 tons of sulfuric acid mist in any 12 consecutive month period, 56.7 tons of total particulate matter (PM) including total PM<sub>10</sub> and total PM<sub>2.5</sub> in any 12 consecutive month period, 100.7 tons of ammonia in any 12 consecutive month period, 30.2 tons of volatile organic compounds in any 12 consecutive month period, 1,401,333 tons of greenhouse gases (expressed as CO<sub>2</sub>e) in any 12 consecutive month period.

##### # 002 [25 Pa. Code §127.12b]

##### Plan approval terms and conditions.

[Compliance with the nitrogen oxides and sulfur dioxide emissions limits in this condition will assure compliance with the nitrogen oxide and sulfur dioxide standards specified in 40 CFR Sections 60.4320 and 60.4330, respectively, as well as the limitations of 25 Pa. Code Chapter 123, relating to particulate matter emissions and sulfur compound emissions]

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) Emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed the limits specified below:

- i. Carbon monoxide: 2.0 ppm<sub>dv</sub>
- ii. Nitrogen oxides (expressed as NO<sub>2</sub>): 2.0 ppm<sub>dv</sub>
- iii. Volatile organic compounds: 1.0 ppm<sub>dv</sub> (without duct burner) and 1.5 ppm<sub>dv</sub> (with duct burner)
- iv. Sulfur oxides (expressed as SO<sub>2</sub>): 0.0011 lb/MMBtu
- v. Total (filterable and condensable) Particulate Matter: 0.0057 lb/MMBtu
- vi. Total PM<sub>10</sub>: 0.0057 lb/MMBtu
- vii. Total PM<sub>2.5</sub>: 0.0057 lb/MMBtu
- viii. H<sub>2</sub>SO<sub>4</sub>: 0.0005 lb/MMBtu

(b) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>

(c) The above emissions limits shall apply at all times except for periods of startup and shutdown.

**SECTION D. Source Level Plan Approval Requirements****# 003 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, the emission of visible air contaminants from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not be in excess of 10% opacity for any 3-minute block and 10% opacity for any 6-minute block period during startup and shutdown.

**# 004 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 shall not emit more than 15.5 pounds of carbon monoxide per hour, 25.4 pounds of nitrogen oxides per hour and 23.5 pounds of ammonia per hour in any 1-hour period, as well as 3.5 pounds of sulfur dioxide per hour, 1.5 pounds of sulfuric acid mist per hour, 12.1 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 6.3 pounds of volatile organic compounds per hour.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblocks incorporated into Source IDs P103 and P104 shall not emit more than 15.2 pounds of carbon monoxide per hour, 24.9 pounds of nitrogen oxides per hour and 23.0 pounds of ammonia per hour in any 1-hour period, as well as 3.3 pounds of sulfur dioxide per hour, 1.4 pounds of sulfuric acid mist per hour, 12.9 pounds of total particulate matter (PM10) including total PM10 and PM2.5 per hour and 5.4 pounds of volatile organic compounds per hour.

(c) The emissions limitations specified above in this condition do not include the air contaminant pollutants emitted during startup and shutdown.

**# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12;

(a) If the permittee elects to construct the first option as identified in this plan approval, the operation of each Mitsubishi combined-cycle powerblock incorporated into Source IDs P101 and P102 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total hazardous air pollutants (HAP) in any 12 consecutive month period.

(b) If the permittee elects to construct the second option as identified in this plan approval, the operation of each Siemens combined-cycle powerblock incorporated into Source IDs P103 and P104 including startups and shutdowns shall not emit equal to or more than 6.50 tons of total HAP in any 12 consecutive month period.

(c) The Department will evaluate the actual HAP emissions rates and may revise the allowable emissions specified above based upon demonstrated performance stack tests results and site-specific emissions data (as approved by the Department) that is obtained during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five years of operation through minor modification provided that the revised allowable emission limitation is not a result of a physical change or change in method of operation at the facility.

**# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12,

(a) NH3 slip emissions from the operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 5 ppmv.

(b) The Department will evaluate the actual NH3 emissions rates and may revise the allowable emissions specified above based upon demonstrated performance (CEMS data, stack tests results, site-specific data, etc) during the first five (5) years of operation, and/or future applicable regulatory requirements. Any revision of the allowable emissions shall be accomplished after five (5) years of operation through minor modification provided that the revised allowable emission limitation does not exceed levels at which the best available technology (BAT) was evaluated and is not a result of a physical change or change in method of operation at the facility.

**SECTION D. Source Level Plan Approval Requirements**

(c) ppm<sub>dv</sub> = parts per million volume on a dry gas basis, corrected to 15 percent O<sub>2</sub>.

**Fuel Restriction(s).****# 007 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 shall be fired on only natural gas. The sulfur content of the natural gas shall not exceed 0.4 grains/100 scf.

**Operation Hours Restriction(s).****# 008 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The durations of startups and shutdowns shall be minimized to the extent practicable.

(b) Startup and shutdown are defined as follows:

- i. Startup is identified as the period between the commencement of ignition and when the Mitsubishi combined-cycle powerblock reaches 50 percent operating level and when the Siemens combined-cycle powerblock reaches 60 percent operating level.
- ii. Shutdown is identified as the period between the time that the Mitsubishi combined-cycle powerblock drops below 50 percent operating level and the fuel is cut to the unit and between the time that the Siemens combined-cycle powerblock drops below 60 percent operating level and the fuel is cut to the unit. Shutdowns shall not exceed 30 minutes in duration.
- iii. Cold start is identified as a restart occurring 72 hours or more after shutdown and shall not exceed 90 minutes in duration.
- iv. Warm start is identified as a restart occurring between 12 hours to 72 hours after shutdown and shall not exceed 90 minutes in duration.
- v. Hot start is identified as a restart occurring less than 12 hours after shutdown and shall not exceed 75 minutes duration.

(c) The permittee shall record the time, date and duration of each startup and shutdown as well as the reason for each startup and shutdown.

**# 009 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the total hours of startups and shutdowns for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 shall not exceed 500 hours in any 12 consecutive month period.

**II. TESTING REQUIREMENTS.****# 010 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.12b, within 180 days of the commencement of operation of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104, the permittee shall conduct EPA reference method testing on each respective unit for nitrogen oxides, carbon monoxide, ammonia slip, volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions.

(b) Subsequent EPA reference method testing for volatile organic compounds, sulfur oxides, sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane, toluene and formaldehyde emissions shall be conducted every two years from the date of the previous tests. The testing frequency may be revised based upon the satisfactory demonstration of compliance with the emission limitations.

(c) All initial and subsequent stack testing shall be performed at the combined-cycle powerblock's maximum routine operating conditions that will demonstrate compliance with all emissions limitations specified in this plan approval.

**# 011 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4400]**

## SECTION D. Source Level Plan Approval Requirements

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests, regarding NOX ?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4400.

### # 012 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4405]

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I perform the initial performance test if I have chosen to install a NOX-diluent CEMS?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4405.

### # 013 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4415]

### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I conduct the initial and subsequent performance tests for sulfur?

The permittee shall comply with the applicable testing requirements specified in 40 CFR Section 60.4415.

## III. MONITORING REQUIREMENTS.

### # 014 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall install, certify, maintain and operate continuous emission monitoring systems (CEMS) for nitrogen oxides, carbon monoxide, carbon dioxide and ammonia emissions on the exhaust of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in accordance with all applicable requirements specified in 25 Pa. Code Chapter 139 and the Department's "Continuous Source Monitoring Manual." No CEMS may however be installed unless Phase I approval has first been obtained from the Department.

(b) The permittee shall submit a Phase I application to the Department for all CEMS to be associated with each combined-cycle powerblock at least 180 days prior to the expected commencement of operation date of each respective unit.

(c) The permittee shall implement a carbon dioxide mass emission monitoring system in accordance with the requirements in 40 CFR Sections 75.13 and 98.43.

### # 015 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the selective catalytic reduction catalysts incorporated into IDs C101, C102, C103 and C104 as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 016 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pre-control and post-control nitrogen oxides (expressed as NO<sub>2</sub>) emissions from Source IDs P101, P102, P103 and P104 shall be monitored and recorded by the feed-forward process control loop to ensure maximum control efficiency and minimum ammonia slip. Visual and audible alarms shall be utilized to indicate improper operation.

### # 017 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the pressure differential across the oxidation catalyst incorporated into IDs C101A, C102A, C103A and C104A as well as the catalyst inlet and outlet temperatures shall be monitored and recorded on a continuous basis. Visual and audible alarms shall be utilized to indicate improper operation.

### # 018 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, a monitoring system shall be in each stack to monitor and record percent oxygen levels to ensure maximum combustion efficiency.

### # 019 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall

## SECTION D. Source Level Plan Approval Requirements

monitor and record the pressure differential across the inlet air filters for Source IDs P101, P102, P103 and P104 on a weekly basis to ensure proposer filter operation and efficiency.

### # 020 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Additional authority for this permit condition is also derived from the provisions specified in 40 CFR Section 60.4365]

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall use one of the following sources of information to monitor for SO<sub>2</sub> emissions from the combustion turbines and heat recovery steam generators incorporated into Source IDs P101, P102, P103 and P104.

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, demonstrating that the total sulfur content of the natural gas used is less than 0.4 grains of sulfur or less per 100 standard cubic feet and has potential sulfur emissions less than 0.0011 lb SO<sub>2</sub>/MMBtu heat input; or

(b) Representative fuel sampling data which shall show that the sulfur content of the fuel does not exceed potential sulfur emissions equal to 0.0011 lb SO<sub>2</sub>/MMBtu heat input. At a minimum, the amount of fuel sampling data specified in 40 CFR 75 section 2.3.1.4 or 2.3.2.4 of appendix D is required.

### # 021 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4340]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I demonstrate continuous compliance for NO<sub>x</sub> if I do not use water or steam injection?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Sections 60.4340.

### # 022 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4345]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4345.

### # 023 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4350]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I use data from the continuous emission monitoring equipment to identify excess emissions?

The permittee shall comply with all applicable monitoring requirements specified in 40 CFR Section 60.4350.

### # 024 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4360]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How do I determine the total sulfur content of the turbine's combustion fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4360.

### # 025 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4370]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### How often must I determine the sulfur content of the fuel?

The permittee shall comply with all applicable SO<sub>2</sub> monitoring requirements specified in 40 CFR Section 60.4370.

## IV. RECORDKEEPING REQUIREMENTS.

### # 026 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology (BACT) of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83, as well as the best available technology (BAT) provisions in 25 Pa. Code Sections 127.1 and 127.12, the permittee shall monitor and keep records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.



## SECTION D. Source Level Plan Approval Requirements

### # 027 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall keep accurate and comprehensive records of the monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, greenhouse gasses, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations.

(b) All information used to satisfy this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## V. REPORTING REQUIREMENTS.

### # 028 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall submit the monthly emissions (including supporting documentation) of nitrogen oxides, carbon monoxide, volatile organic compound, greenhouse gas, total hazardous air pollutants, sulfur oxides (SO<sub>2</sub>), sulfuric acid mist, total PM, total PM<sub>10</sub>, total PM<sub>2.5</sub>, hexane and formaldehyde from each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104 in order to demonstrate compliance with the emission limitations on a semi-annual basis.

(b) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 029 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall submit the records of the amount of fuel used each month in each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104 as well as the monthly heat input (MMBtu), power output (MW-hr) and hours of operation of each unit to verify compliance with the input-based BACT and BAT efficiency limitations.

(a) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### # 030 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 96.21(b)(1)(ii).

### # 031 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall submit a complete NO<sub>x</sub> Budget permit application in accordance with 40 CFR Section 97.21(b)(1)(ii).

### # 032 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]

#### Subpart A - General Provisions

##### Address.

The submission of all requests, reports, applications, submittals and other communications required by this plan approval and federal regulations, must be made to both the Department of Environmental Protection and the Environmental Protection Agency. The Environmental Protection Agency copies may be sent to:

Associate Director  
Office of Enforcement and Compliance Assistance (3AP20)  
U.S. EPA, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

and

The Pennsylvania Department of Environmental Protection  
Air Quality Program Manager

## SECTION D. Source Level Plan Approval Requirements

208 W. Third Street, Suite 101  
Williamsport, PA 17701-6448

### # 033 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4375]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What reports must I submit?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4375.

### # 034 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4380]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### How are excess emissions and monitor downtime defined for NOX ?

The permittee shall comply with the applicable reporting requirements specified in 40 CFR Sections 60.4380.

### # 035 [40 CFR Part 72 Regulations on Permits §40 CFR 72.30]

#### Subpart C--Acid Rain Permit Application

##### Requirements to apply.

The permittee shall submit a complete Acid Rain permit application in accordance with 40 CFR Section 72.30(b)(2)(ii).

### # 036 [40 CFR Part 98 Mandatory Greenhouse Gas Reporting §40 CFR 98.1]

#### Subpart A - General Provision

##### Purpose and scope.

The permittee shall comply with the applicable Mandatory GHG Reporting requirements of 40 CFR Part 98.

(a) The facility shall comply with the requirements in 40 CFR Part 98 Subpart D, (40 CFR §§ 98.40 through 98.48).

## VI. WORK PRACTICE REQUIREMENTS.

### # 037 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, high efficiency inlet air filters shall be used in the combustion air inlet section of each combined-cycle powerblock incorporated into Source IDs P101, P102, P103 and P104.

### # 038 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the permittee shall operate and maintain the stationary combustion turbine, heat recovery steam generator, duct burners and air pollution control equipment associated with Source IDs P101, P102, P103 and P104, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

### # 039 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, all air-contaminant sources and control devices at the Moxie Patriot Generation Plant shall be maintained and operated in a manner consistent with good air pollution control practices and in accordance with the manufacturers' recommendations and maintenance plan.

### # 040 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of 40 CFR Section 52.21 and the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the heat input for each of the combined-cycle turbines incorporated in Source ID P101, P102, P103, and P104 shall not exceed 6735 Btu/kW-hr (lower heating value), without duct burner firing. In order to demonstrate compliance with this limitation, the permittee shall calculate the average net heat rate on an hourly basis consistent with equation F-20 and procedures provided in 40 CFR Part 75, Appendix F, § 5.5.2 and the results shall be corrected to ISO conditions (59 degrees F, 14.7 psia, and 67% humidity).

## SECTION D. Source Level Plan Approval Requirements

### # 041 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each powerblock associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors, SCR technology, Oxidation Catalyst technology and fired only on natural gas that meet the specifications of this plan approval.

### # 042 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the best available control technology of the Prevention of Significant Deterioration provisions in 40 CFR Section 52.21 and of 25 Pa. Code Section 127.83 and the lowest achievable emission rate of the New Source Review Regulation provisions in 25 Pa. Code Sections 127.201 through 127.217 as well as the best available technology provisions in 25 Pa. Code Sections 127.1 and 127.12, each combustion turbine associated with Source IDs P101, P102, P103 and P104 shall be equipped with dry-low-NO<sub>x</sub> (DLN) combustors.

### # 043 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4333]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

#### What are my general requirements for complying with this subpart?

[Additional authority for this plan approval condition is derived from 40 CFR Section 60.4333(a)]

The permittee shall operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

## VII. ADDITIONAL REQUIREMENTS.

### # 044 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall commence construction of and operate only one of two options that are identified below.

(a) The first option consists of constructing two Mitsubishi M501GAC lean premix DLN natural-gas-fired combustion turbines (CT) and steam turbines (ST), where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired duct burners (DB) and heat recovery steam generators (HRSG). Each Mitsubishi train will be capable of producing approximately 472 megawatts (MW) of electricity and is incorporated into this plan approval as Source IDs P101 and P102. The maximum heat input rating of each CT associated with Source IDs P101 and P102 shall be no greater than 2905 MMBtu/hr (high heating value, HHV). Each DB associated with Source IDs P101 and P102 shall not have a maximum heat input rating above 387 MMBtu/hr (HHV).

(b) The second option consists of constructing two Siemens SGT6-8000H lean premix DLN natural-gas-fired CTs with STs, where each CT and ST train are configured in a single shaft alignment and drive one common electric generator. Each unit will be equipped with natural-gas-fired DBs and HRSGs. Each Siemens train will be capable of producing approximately 458 MW of electricity and incorporated into this plan approval as Source IDs P103 and P104. The maximum heat input rating of each CT associated with Source IDs P103 and P104 shall be no greater than 3007 MMBtu/hr (HHV). Each DB associated with Source ID P103 and P104 shall not have a maximum heat input rating above 164 MMBtu/hr (HHV).

(c) Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, only two combined-cycle powerblocks shall be constructed and operated from the options identified in this condition. The two combined-cycle powerblocks chosen by the permittee shall be either the two 472 MW combined-cycle powerblocks incorporated into Source IDs P101 and P102 or the two 458 MW combined-cycle powerblocks incorporated into Source IDs P103 and P104.

### # 045 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The Department will evaluate the actual emission rates and may revise the allowable emission limitations based upon demonstrated performance (CEMS data, stack tests results), and/or subsequently promulgated applicable requirements during the first five years of operation. Any revision of the allowable emission limitations shall be accomplished after five

## SECTION D. Source Level Plan Approval Requirements

years of operation by minor modification provided that the revised allowable emission limitations do not exceed levels at which the lowest achievable emission rate (LAER), best available control technology (BACT) and best available technology (BAT) were evaluated, do not exceed the level at which the facility impacts were modeled, and that are not a result of a physical change or change in method of operation at the facility.

### # 046 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) Within 30 days of the selection of the specific manufacturer and model of the combined-cycle powerblock option (Source IDs P101 and P102 or Source IDs P103 or P104), the permittee shall submit specifications for the selected combined-cycle powerblocks to the Department for review and final approval. These specifications shall include the maximum rated heat input of the combustion turbine and duct burner, the make and model of the unit, design steam pressure, and any other information pertinent to the combined-cycle powerblocks' performance.

(b) In order for the selected combined-cycle powerblocks to be given final approval by the Department, their specifications must be determined by the Department to be equivalent to those contained in the application and supplemental materials submitted for plan approval.

### # 047 [25 Pa. Code §127.205]

#### Special permit requirements.

Pursuant to the new source review provisions in 25 Pa. Code Sections 127.201 through 127.217, if option 2 is chosen, the permittee shall purchase and apply 242 tons per year of NO<sub>x</sub> emission reduction credits (ERCs) and 69.2 tons per year of VOC ERCs prior to the commencement of operation of Source IDs P103 and P104 at the facility to offset the total of the net increase in potential to emit. The permittee shall certify to the Northcentral Regional Office of the Department the amount of ERCs purchased, the company from which the ERCs were purchased, and the effective date of transfer of the ERCs. The purchase and application of the NO<sub>x</sub> and VOC ERCs shall be tracked in the Department's ERC registry system. Failure to purchase and apply the ERCs prior to commencement of operation at the facility shall make this plan approval null and void.

### # 048 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 96 and 25 Pa. Code Chapter 145 Subchapter D for each of the combined-cycle powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 049 [25 Pa. Code §145.204.]

#### Incorporation of Federal regulations by reference.

The permittee shall comply with the applicable requirements of 40 CFR Part 97 for each of the powerblocks incorporated into Source IDs P101, P102, P103 and P104.

### # 050 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4300]

#### Subpart KKKK - Standards of Performance for Stationary Combustion Turbines

##### What is the purpose of this subpart?

The combustion turbines, heat recovery steam generators and duct burners associated with each combined-cycle powerblock that are incorporated into Source IDs P101, P102, P103 and P104 shall comply with all applicable requirements of Subpart KKKK of the Standards of Performance for New Stationary Sources, 40 CFR 60.4300 through 60.4420 (Standards of Performance for Stationary Combustion Turbines).

### # 051 [40 CFR Part 72 Regulations on Permits §40 CFR 72.1]

#### Subpart A--Acid Rain Program General Provisions

##### Purpose and scope.

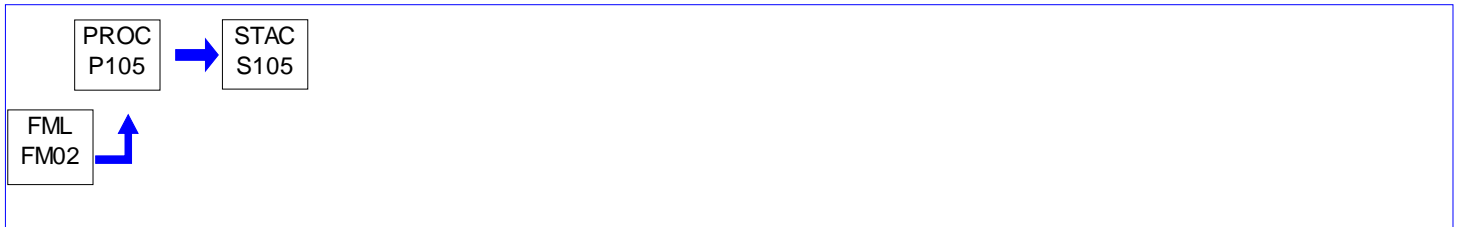
The permittee shall comply with the Title IV Acid Rain Program 40 CFR Parts 72-78.

**SECTION D. Source Level Plan Approval Requirements**

Source ID: P105

Source Name: EMERGENCY GENERATOR ENGINE

Source Capacity/Throughput:

**I. RESTRICTIONS.****Emission Restriction(s).****# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Compliance with this streamlined permit condition will assure compliance with the provisions of 25 Pa. Code §§ 123.13 and 123.21]

Pursuant to the best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the air contaminant emissions from the exhaust of the engine-generator (generator-engine), Source ID P105, shall not exceed the following limitations:

- (a) Nitrogen Oxides (expressed as NO<sub>2</sub>) – 4.93 gm/bhp-hr, 16.0 lb/hr, 0.8 tpy;
- (b) Carbon Monoxide – 0.13 gm/bhp-hr, 0.42 lb/hr, 0.02 tpy;
- (c) Volatile Organic Compound (expressed as THC) – 0.01 gm/bhp-hr, 0.03 lb/hr, 0.01 tpy;
- (d) Particulate Matter less than 10 microns in diameter (PM-10) – 0.02 gm/bhp-hr, 0.06 lb/hr, 0.01 tpy;
- (e) PM-2.5 – 0.02 gm/bhp-hr, 0.06 lb/hr, 0.01 tpy;
- (f) Sulfur Oxides (expressed as SO<sub>2</sub>) – 0.005 gm/bhp-hr, 0.02 lb/hr, 0.01 tpy.

**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Compliance with this streamlined permit condition will assure compliance with the provisions of 25 Pa. Code § 123.41]

Pursuant to the best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the visible emissions from the engine-generator, Source ID P105, shall not exceed 15% in any 3-minute period and 50% at any time.

**# 003 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4205]****Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines****What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?**

Pursuant to the requirements of 40 CFR § 60.4205(b) and 60.4211(c), the engine-generator, Source ID P105, shall be EPA-certified to meet the emissions standards that are specified in 40 CFR §§ 89.112 and 89.113 for the same model year and maximum engine power.

**Fuel Restriction(s).****# 004 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the permittee shall only use diesel fuel that is classified as ULTRA-LOW SULFUR NON-HIGHWAY DIESEL FUEL (15 ppm Sulfur Maximum) pursuant to 40 CFR Part 80 Subpart I, to operate the engine-generator (Source ID P105).

**Operation Hours Restriction(s).****# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the duration of each test of the engine-generator (Source ID P105) or the engine-pump (Source ID P106) shall not exceed 30 minutes or such other duration as dictated by utility practice or the manufacturer.

**# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, there shall be no

## SECTION D. Source Level Plan Approval Requirements

simultaneous testing of the engine-generator (Source ID P105) and the engine-pump (Source ID P106) within the same hour.

### # 007 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, testing of the engine-generator (Source ID P105) or the engine-pump (Source ID P106) shall not occur during (within the same hour as) startup or shutdown of the combustion turbines.

### # 008 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Compliance with this streamlined permit condition will assure compliance with the provisions of 40 CFR § 60.4211(f)]  
(a) Pursuant to best available technology requirements of 25 Pa. Code Sections 127.1 and 127.12, the total operation of Source ID P105 shall not exceed 100 hours in any 12 consecutive month period.  
(b) Additionally, the engine-generator, Source ID P105, shall not be used for peak shaving or to generate income by supplying power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity.

## II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

## III. MONITORING REQUIREMENTS.

### # 009 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Pursuant to best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the engine-generator, Source ID P105, shall be equipped with a non-resettable hour meter that accurately monitors the engine-generator's hours of operation.

## IV. RECORDKEEPING REQUIREMENTS.

### # 010 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Additional authority for this permit condition is also derived from the provisions of 40 CFR § 60.4214(b)]  
(a) The permittee shall record the following information on the engine-generator, Source ID P105, on a monthly basis:  
(b) hours that the engine-generator operated through the non-resettable hour meter  
(c) the 12-consecutive month total hours of operation, including supporting documentation  
(d) the time of operation of the engine-generator and the reason the engine-generator was in operation during that time  
(e) The information used to demonstrate compliance with this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

### # 011 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall keep accurate and comprehensive records of the following information for the engine-generator (Source ID P105);  
(a) the supporting information and calculations used to demonstrate that the emissions of particulate matter and sulfur oxides from the exhaust of the engine-generator comply with the requirements in 25 Pa. Code §§ 123.13 and 123.21, respectively;  
(b) monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compound, sulfur oxides (SO<sub>2</sub>), total PM, total PM<sub>10</sub> and total PM<sub>2.5</sub> to demonstrate compliance with the emission limitations  
(c) The information used to demonstrate compliance with this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## SECTION D. Source Level Plan Approval Requirements

### # 012 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

The permittee shall keep record of the fuel certification reports for each delivery of diesel fuel for the engine-generator (Source ID P105) to verify compliance with the fuel restriction requirements for the engine-generator.

(a) The information used to demonstrate compliance with this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## V. REPORTING REQUIREMENTS.

### # 013 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

(a) The permittee shall submit the monthly hours of operation for the engine-generator (Source ID P105) and the engine-pump (Source ID P106) in order to demonstrate compliance with the operational limitations on a semi-annual basis.

(b) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

## VI. WORK PRACTICE REQUIREMENTS.

### # 014 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4206]

#### Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

#### How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

The permittee shall operate and maintain the engine-generator, Source ID P105, to achieve the emission standards specified in 40 CFR §§ 89.112 and 89.113 over the entire life of the engine.

(a) Any testing used to verify compliance with this work practice restriction shall be performed in accordance with 40 CFR Part 64 Subpart IIII, including 40 CFR § 60.4212, and acceptable test methods and procedures to the Department.

### # 015 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4211]

#### Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

#### What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

The engine-generator, Source ID P105, shall be installed and configured according to the manufacturer's emission-related specifications.

## VII. ADDITIONAL REQUIREMENTS.

### # 016 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

[Compliance with this permit condition will assure compliance with the requirements of 40 CFR Part 63 Subpart ZZZZ]

The engine-generator, Source ID P105, is subject to the requirements in 40 CFR Part 60 Subpart IIII. The permittee shall comply with all applicable provisions specified 40 CFR §§ 60.4200 through 60.4219, including appendices.

### # 017 [25 Pa. Code §127.12b]

#### Plan approval terms and conditions.

Source ID P105 is a Caterpillar Model DM9933 1000 kW Generator that includes a Caterpillar C32 TA, V-12, 4-stroke, water-cooled, diesel-fired reciprocating internal combustion engine (or equivalent as approved by the Department) used to supply emergency power to the site.

(a) The engine-generator shall include electronic fuel injection and a turbocharged aspiration system.

### # 018 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4210]

#### Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

#### What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

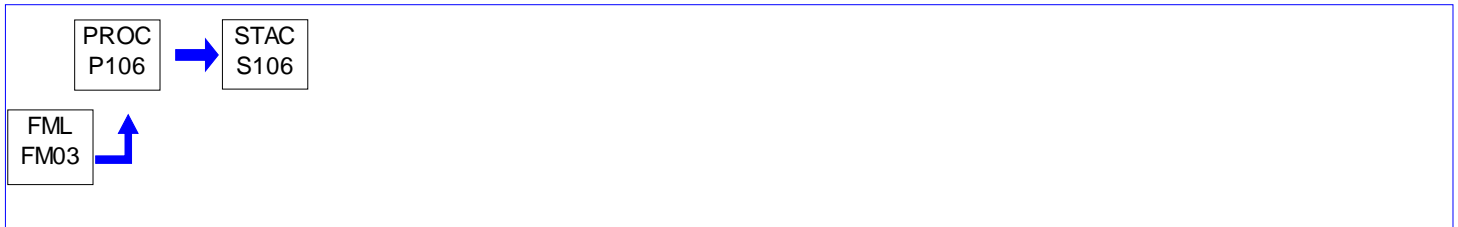
The engine-generator, Source ID P105, shall meet the labeling requirements in § 60.4210(f).

**SECTION D. Source Level Plan Approval Requirements**

Source ID: P106

Source Name: FIRE PUMP ENGINE

Source Capacity/Throughput:

**I. RESTRICTIONS.****Emission Restriction(s).****# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Compliance with this streamlined permit condition will assure compliance with the provisions of 25 Pa. Code §§ 123.13 and 123.21]

Pursuant to the best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the fire engine-pump (pump-engine), Source ID P106, shall be EPA certified to meet the following emissions standards:

- (a) Nitrogen Oxides (expressed as NO<sub>2</sub>) – 2.6 g/hp-hr, 2.6 lb/hr, 0.13 tpy;
- (b) Carbon Monoxide – 0.5 g/hp-hr, 0.51 lb/hr, 0.03 tpy;
- (c) Volatile Organic Compound (expressed as THC) – 0.10 g/hp-hr, 0.10 lb/hr, 0.01 tpy;
- (d) Particulate Matter less than 10 microns in diameter (PM-10) – 0.09 g/hp-hr, 0.09 lb/hr, 0.01 tpy;
- (e) PM-2.5 – 0.09 g/hp-hr, 0.09 lb/hr, 0.01 tpy;
- (f) Sulfur Oxides (expressed as SO<sub>2</sub>) – 0.005 g/hp-hr, 0.01 lb/hr, 0.01 tpy.

**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Compliance with this streamlined permit condition will assure compliance with the provisions of 25 Pa. Code § 123.41]

Pursuant to the best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the visible emissions from the engine-pump, Source ID P106, shall not exceed 15% in any 3-minute period and 50% at any time.

**# 003 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4205]****Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines****What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?**

Pursuant to the requirements of 40 CFR § 60.4205(c) and 60.4211(c), the engine-pump, Source ID P106, shall be EPA-certified to meet the emissions standards that are specified in 40 CFR §§ 60.42025(c) for the same model year and maximum engine power.

**Fuel Restriction(s).****# 004 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this permit condition is also derived from the provisions of 40 CFR § 60.4207]

Pursuant to best available technology requirements of 25 Pa. Code §§ 127.1 and 127.12, the permittee shall only use diesel fuel that is classified as ULTRA-LOW SULFUR NON-HIGHWAY DIESEL FUEL (15 ppm Sulfur Maximum) pursuant to 40 CFR Part 80 Subpart I, to operate the engine-pump (Source ID P106).

**Operation Hours Restriction(s).****# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, the duration of each test of the engine-generator (Source ID P105) or the engine-pump (Source ID P106) shall not exceed 30 minutes or such other duration as dictated by utility practice or the manufacturer.

**# 006 [25 Pa. Code §127.12b]**



## SECTION D. Source Level Plan Approval Requirements

### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, there shall be no simultaneous testing of the engine-generator (Source ID P105) and the engine-pump (Source ID P106) within the same hour.

#### # 007 [25 Pa. Code §127.12b]

### Plan approval terms and conditions.

Pursuant to the best available technology requirements of 25 Pa. Code Section 127.1 and 127.12, testing of the engine-generator (Source ID P105) or the engine-pump (Source ID P106) shall not occur during (within the same hour as) startup or shutdown of the combustion turbines.

#### # 008 [25 Pa. Code §127.12b]

### Plan approval terms and conditions.

Pursuant to best available technology requirements of 25 Pa. Code Sections 127.1 and 127.12, the total operation of Source ID P106 shall not exceed 100 hours in any 12 consecutive month period.

## II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

## III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

## IV. RECORDKEEPING REQUIREMENTS.

#### # 009 [25 Pa. Code §127.12b]

### Plan approval terms and conditions.

The permittee shall record the following information on the engine-pump, Source ID P106, on a monthly basis:

- (a) the hours that the engine-pump operated through the non-resettable hour meter;
- (b) the 12-consecutive month total hours of operation, including supporting documentation
- (c) the time of operation of the engine-pump and the reason the engine-pump was in operation during that time
- (d) monthly emissions of nitrogen oxides, carbon monoxide, volatile organic compound, sulfur oxides (SO<sub>2</sub>), total PM, total PM<sub>10</sub> and total PM<sub>2.5</sub> to demonstrate compliance with the emission limitations
- (e) The information used to demonstrate compliance with this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

#### # 010 [25 Pa. Code §127.12b]

### Plan approval terms and conditions.

The permittee shall keep accurate and comprehensive records of the following information for the engine-pump (Source ID P106);

- (a) the supporting information and documentation used to demonstrate that the emissions from the exhaust of the engine-pump comply with the emissions limitations in this permit as well as the requirements in 25 Pa. Code §§ 123.13 and 123.21.
- (b) The information used to demonstrate compliance with this recordkeeping requirement shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

#### # 011 [25 Pa. Code §127.12b]

### Plan approval terms and conditions.

The permittee shall keep record of the fuel certification reports for each delivery of diesel fuel for the engine-pump, Source ID P106, to verify compliance with the fuel restriction requirements for the engine-pump.

- (a) The information used to demonstrate compliance with this permit condition shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

## SECTION D. Source Level Plan Approval Requirements

### V. REPORTING REQUIREMENTS.

#### # 012 [25 Pa. Code §127.12b] Plan approval terms and conditions.

- (a) The permittee shall submit the monthly hours of operation for the engine-generator (Source ID P105) and the engine-pump (Source ID P106) in order to demonstrate compliance with the operational limitations on a semi-annual basis.
- (b) The semi-annual reports shall be submitted to the Department no later than March 1 (for January 1 through December 31 of the previous year) and September 1 (for July 1 of the previous year through June 30 of the concurrent year).

### VI. WORK PRACTICE REQUIREMENTS.

#### # 013 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4206] Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

The permittee shall operate and maintain the engine-pump, Source ID P106, to achieve the emission standards in this permit over the entire life of the engine.

- (a) Any testing used to verify compliance with this work practice restriction shall be performed in accordance with 40 CFR Part 64 Subpart IIII, including 40 CFR § 60.4212, and test methods and procedures acceptable to the Department.

#### # 014 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4211] Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

The engine-pump, Source ID P106, shall be installed and configured according to the manufacturer's emission-related specifications.

### VII. ADDITIONAL REQUIREMENTS.

#### # 015 [25 Pa. Code §127.12b] Plan approval terms and conditions.

[Compliance with this permit condition will assure compliance with the requirements of 40 CFR Part 63 Subpart ZZZZ]  
The engine-pump, Source ID P106, is subject to the requirements in 40 CFR Part 60 Subpart IIII. The permittee shall comply with all applicable provisions specified 40 CFR §§ 60.4200 through 60.4219, including appendices.

- (a) Source ID P106 is a Clark Model JX6H-UFADF0 that includes a John Deere Co. In-Line, 4-stroke, water-cooled, diesel-fired reciprocating internal combustion engine rated for 460 bhp (or equivalent as approved by the Department) used to power the fire suppression system at the facility.
- (b) The engine-pump shall include electronic fuel injection and a turbocharged aspiration system.

**SECTION D. Source Level Plan Approval Requirements**

Source ID: P107

Source Name: STORAGE TANKS

Source Capacity/Throughput:

**I. RESTRICTIONS.**

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

**II. TESTING REQUIREMENTS.**

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

**III. MONITORING REQUIREMENTS.**

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

**IV. RECORDKEEPING REQUIREMENTS.****# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The permittee shall keep a record of the vapor pressure of the contents of each storage tank associated with Source ID P107 unless the respective tank is equipped with pressure relief valves that meets the requirement in this permit relating to pressure release settings.

(b) The information used to demonstrate compliance with this permit condition shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

**V. REPORTING REQUIREMENTS.**

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

**VI. WORK PRACTICE REQUIREMENTS.****# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Compliance with this streamlined permit condition assures compliance with the provisions of 25 Pa. Code § 129.57]  
The permittee shall not store any liquid containing volatile organic compounds (VOC) with a vapor pressure greater than 1.5 psia (10.5 kilopascals) under actual storage conditions in each storage tank associated with Source ID P107 unless each of the tanks are equipped with pressure relief valve which is maintained in good operating condition and which are set to release at no less than 0.7 psig of pressure or 0.3 psig of vacuum, or the highest possible pressure and vacuum in accordance with state or local fire codes or the National Fire Prevention Association guidelines or other national consensus standards acceptable to the Department.

**VII. ADDITIONAL REQUIREMENTS.****# 003 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Source ID P107 consists of two (2) 15,000-gallon lube oil tanks and each tank services the lubing system associated with

**SECTION D. Source Level Plan Approval Requirements**

each of the electric generating units.



## **SECTION E. Alternative Operation Requirements.**

No Alternative Operations exist for this Plan Approval facility.

**SECTION F. Emission Restriction Summary.**

No emission restrictions listed in this section of the permit.

**SECTION G. Miscellaneous.**

The following air contaminant sources are considered to the Department to be insignificant with regards to air contaminant emissions and are determined to be exempt from permitting requirements. However, this determination does not exempt the sources from compliance with all applicable State and Federal regulations, including all applicable regulations specified in 25 Pa. Code Chapters 121-145:

Fire-pump Ultra-Low Sulfur Diesel Day Tank (300 gallons)

Ultra-Low Sulfur Diesel Tank (1600 gallons)

The Lubing System for each of the Electric Generating Units

The Air Coolers for each of the Electric Generating Units



\*\*\*\*\* End of Report \*\*\*\*\*